Building capable communities: Experiences in a rural Fijian context

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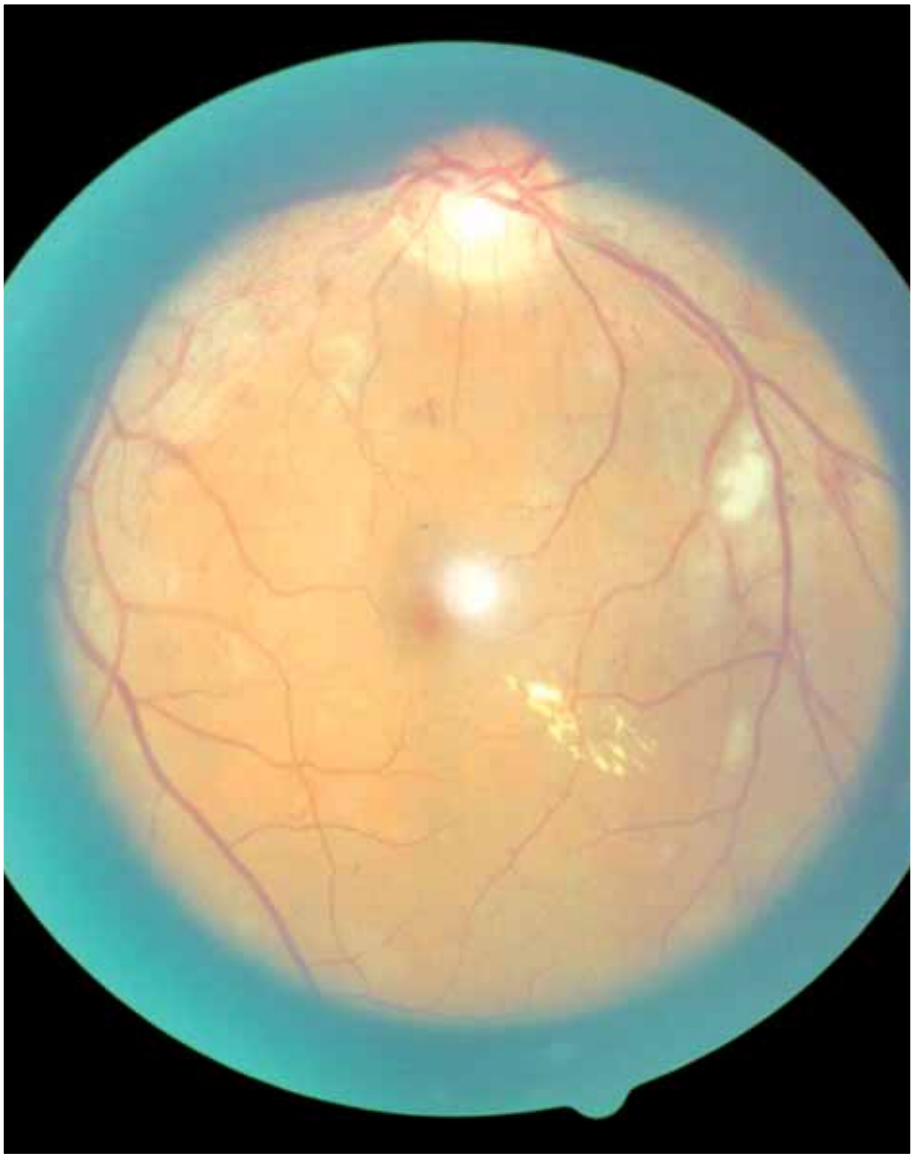

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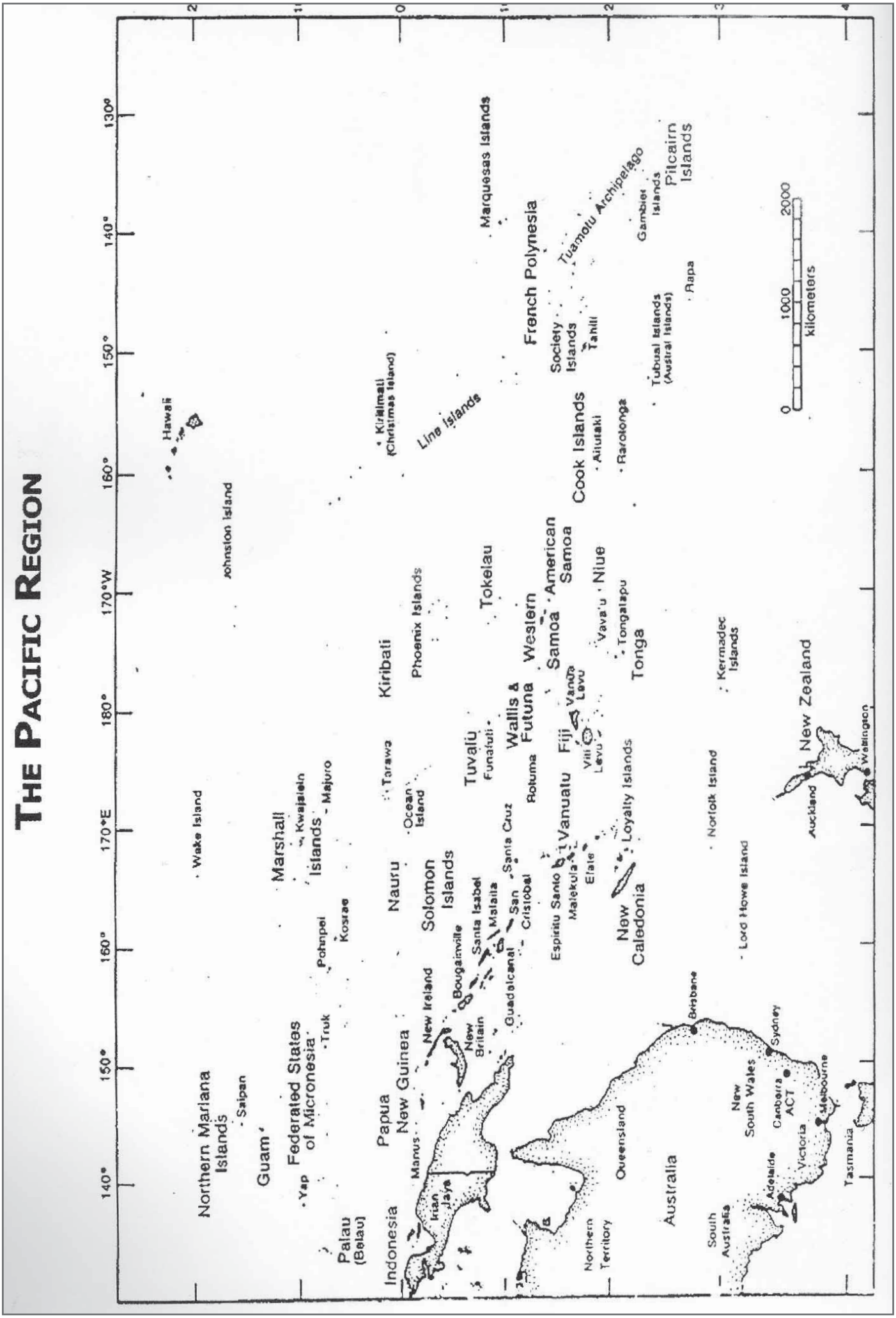
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Cover: *"Editors" Sweet route to blindness: Diabetic Rectinopathy; from the Editors' Collection*

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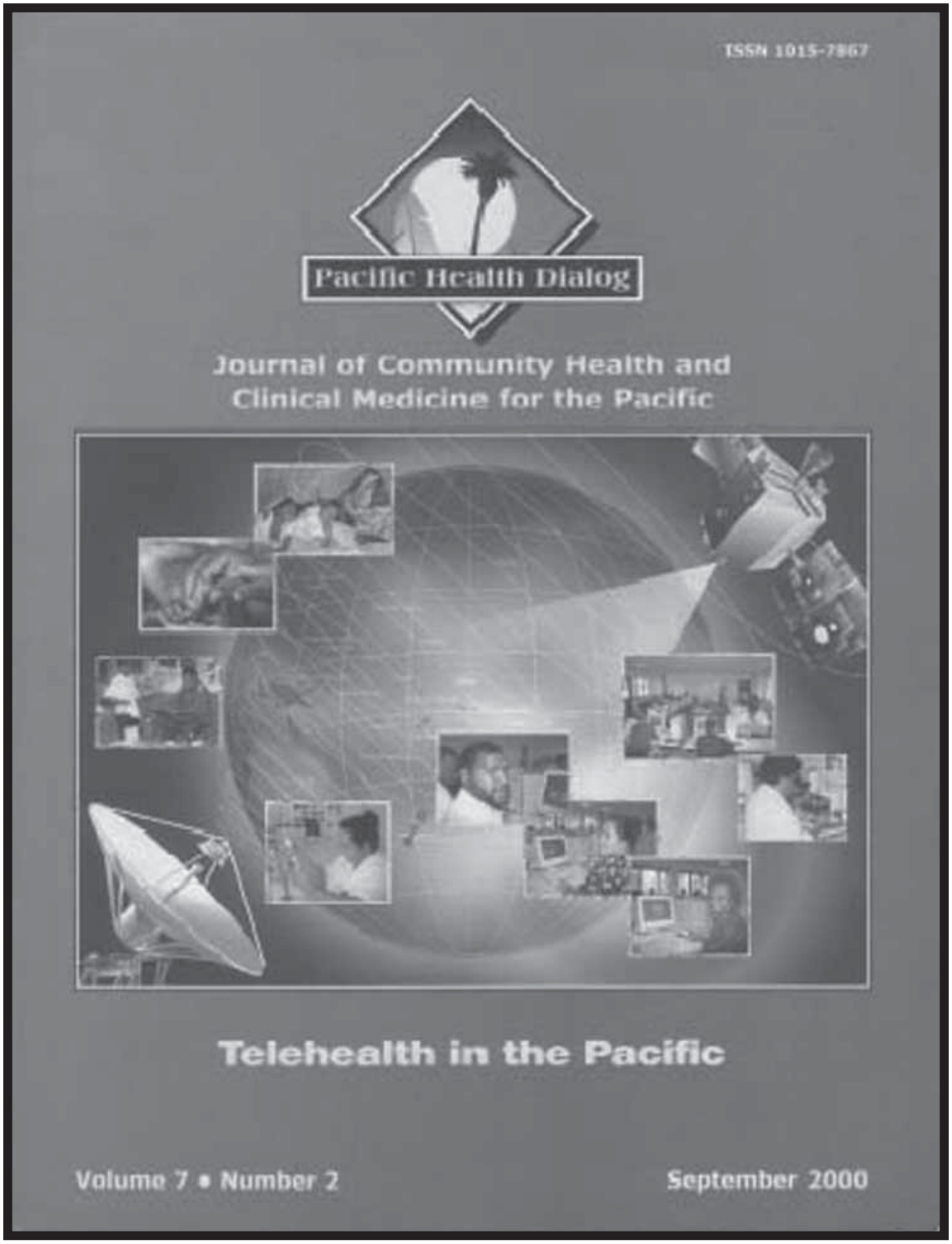
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Guest Editorial

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Introduction

From its origins within the Primary Health Care movement of the 1970s, Health Promotion is coming of age as a theory-informed, evidence-based and broadly accountable practice. The promotion of health in the Pacific has been championed by the World Health Organization (WHO) which plays a lead role in assisting Pacific Island governments to establish health promotion programmes, policies, and other organized activities as well as calling for rigorous evaluation[1,2,3,4,5,6,7,8]. But what is the current status of health promotion policy and practice in the Pacific Islands? What key lessons have been learned? And what of the future?

This special volume of Pacific Health Dialog offers some answers to these questions. In this editorial, we briefly recap health promotion's conceptual evolution before highlighting the papers presented in the volume.

Phases and definitions

The increased emphasis placed on health promotion in the last thirty years, stimulated largely by WHO, has been classified as passing through four conceptual phases:[1] the ***primary health care phase*** of the late 1970s with its emphasis on addressing inequality[2]; the ***lifestyle phase*** of the early 1980s with its focus on individual education and community-based initiatives[3]; the ***new public health phase*** of the mid- to late-1980s that expanded public health attention to policy development; and [4] with increasing concerns over threats to the global environment and the need for sustainable development, the ***ecological public health phase*** from the late 1980s to the present time[9,10].

Partly due to the various theories, models and methods developed during these different phases, and partly because "Health Promotion" is a vibrant, rapidly evolving field requiring definitional elasticity, tremendous diversity exists among health promotion professionals in the terms and approaches they employ. In short, practitioners are "divided by a common language"[11,12,13,14]. Health promotion draws upon an eclectic range of disciplines including anthropology, epidemiology, sociology, psychology, and other behavioural sciences, public health, political science, education and communication, to name but a few. "Health promotion" is often used interchangeably with or to subsume various non-clinical approaches to public health such as: health education; health communication; community organization; community development; community participation; advocacy; partnership building; social marketing; social mobilization; using social capital; health behaviour change; healthy public policy; health promoting settings; organizational development; disease prevention; risk reduction; ecological public health; empowerment; and health protection.

Table 1 lists some of the most important definitions of health promotion that have been proposed. Inconsistencies represent discrepancies in perspectives and emphasis, rather than fundamental conflicts in substance.

Table 1: Definitions of health promotion.[15]

A strategy aimed at informing, influencing and assisting both individuals and organizations so that they will accept more responsibility and be more active in matters affecting mental and physical health[16].
A combination of health education and related organizational, political and economic programmes designed to support changes in behaviour and in the environment that will improve health.[17]
Any combination of health education and related organizational, political and economic interventions designed to facilitate behavioural and environmental changes that will improve health[18].
Any combination of health education and related organization, economic and environmental supports for behaviour conducive to health[19].
The implementation of efforts to foster improved health and well-being in all four domains of health [physical, social, psychological, and personal][20].
The process of enabling people to increase control over the determinants of health and thereby improve their health.[21]
The process of enabling people to increase control over, and to improve, their health[22].
The maintenance and enhancement of existing levels of health through the implementation of effective programmes, services, and policies[23].
The advancement of wellbeing and the avoidance of health risks by achieving optimal levels of behavioural, societal, environmental, and biomedical determinants of health.[24]
The science and art of helping people choose their lifestyles to move toward a state of optimal health[25].
Any activity or program designed to improve social and environmental living conditions such that people's experience of well-being is increased[26].

A useful distinction has been made between health promotion as *an outcome* and health promotion as *a process*. The nature of outcomes and processes ultimately determines how one answers the question of what health promotion is and what works. Health promotion can be conceptualized as an outcome in terms of goals and objectives. Goals refer to the desirable end-states (often defined as improved health or well-

being and occasionally as health maintenance) that guide and motivate health promotion strategies. Objectives refer to the intermediate (usually short-term), the achievement of which is believed to mediate the attainment of the desirable end-states. Health promotion can be viewed as a process of personal, organizational, and policy development initiating, managing, and implementing change.

Despite several conceptual phases, different definitions, numerous models, and diverse but often overlapping approaches, international and regional meetings and reports have declared that to improve population health in a sustainable and equitable manner, health promoting action must occur on at least five key fronts: building healthy public policy; creating supportive environments; strengthening community action; developing personal skills; and reorienting health services.[27] The premise is that action must occur at individual, communal, and environmental levels (Table 2).

Table 2. Levels of health promoting action.

Level of Action	Observed approaches to reducing health inequalities	Ottawa Charter for Health Promotion
Macro-level change	Encouraging fundamental structural and cultural change	• Building health public policy • Creating supportive environments
Macro- and intermediate level change	Improving access to resources for health services	• Building health public policy • Re-orienting health services
Intermediate and micro-level change	Strengthening communities	• Strengthening community action • Building health public policy • Creating supportive environments
Micro-level change	Strengthening individuals	• Developing personal skills

Guiding principles

Health promotion at all levels is guided by a set of principles:

- Empowerment – enabling individuals and communities to assume more power over the personal, socioeconomic and environmental factors that affect their health;
- Participation – involving all concerned at all stages of the process;
- Holistism – fostering physical, mental, social and spiritual health;
- Intersectoralism – involving the collaboration of agencies from relevant sectors;
- Equity – guided by a concern for equity and social justice;
- Sustainability – bringing about changes that individuals and communities can maintain once initial funding has ended; and
- Multistrategic – using a variety of combined approaches, including policy development, organizational change, community development, legislation, advocacy, education and communication.

In addition, the Fifty-First World Health Assembly called for the adoption of an evidence-based approach to health promotion policy and practice, using the full range of quantitative and qualitative methodologies.

Coming of Age

Clear evidence now exists that: (a) comprehensive approaches that use combinations of the five strategies are the most effective; (b) certain settings offer practical opportunities for the implementation of comprehensive strategies, such as cities, islands, local communities, markets, schools, workplaces, and health services; (c) people have to be at the centre of action and decision-making processes if health promotion is to be effective; (d) access to education and information is vital in achieving effective participation and the "empowerment" of people and communities; (e) health promotion is a "key investment" and an essential element of health development. International declarations such as the 1997 Jakarta Declaration and the recent Ministerial Statement at the Fifth Global Conference on Health Promotion in Mexico highlight the relevance of health promotion as an essential element in improving public health.

Health Promotion in the Pacific

Since its inception, Pacific Health Dialog (PHD) has published regularly on the subject of health promotion. The increasing number of health promotion departments, projects and partnerships across the region provides policy makers, practitioners and evaluators with plenty to consider, such as how health promotion has evolved, what lessons have been learned, what evidence of impact has accumulated, and what more can be done in the Pacific. A volume dedicated specifically to contemporary health promotion efforts in the region is timely.

Many issues impinge directly and indirectly on efforts to promote health in the Pacific such as:

- the continuing social and economic burden of infectious diseases;
- rising incidence of non-communicable diseases;
- declining health services;
- increasing patient fees;
- population growth;
- aging populations;
- economic recession;

- inadequate education;
- urban drift;
- rising unemployment;
- national border and provincial boundary disputes and complications;
- refugees;
- environmental degradation;
- gender inequalities in educational and political opportunities;
- civil unrest;
- domestic violence;
- challenges to sexual health;
- political upheaval and instability;
- public service and law reforms;
- natural disasters;
- going to scale with small-scale projects that "appear" to work;
- relationships between government and international development agencies;
- intersectoral coordination;
- international debt repayment; and
- competitive relationships between donors.

This volume offers insights into how health promotion is directly addressing, overcoming, or constrained by such issues in American Samoa, Australia, Fiji Islands, Republic of Kiribati, Republic of Marshall Islands, New Zealand, Papua New Guinea, Solomon Islands, Kingdom of Tonga, and Republic of Vanuatu. Lessons learned from several multi-country initiatives are also presented.

The range of topics is diverse, for example: **HIV and AIDS** (McPhail-Bell et al, Katz et al), **geriatric care** (Nadavu), **breast cancer** (Alofabi), **mental health** (Roberts et al), **violence and masculinity** (Roberts), **oral health** (abstracts), **obesity** (Davidson et al, Swinburn et al, Schultz et al), **nutrition** (Gammino et al, White and Lewani), **biodiversity** (Englberger et al), **tobacco** (Allen and Clarke, Zandes), etc..

This volume includes exciting **new evidence-based health promotion interventions** such as food store trials (Gittlesohn et al), promotion of traditional food (Englberger et al), and obesity prevention among young people (Swinburn et al, Schultz et al). As more is learned about what works and what does not, the need for **better tools** is ever apparent (e.g., Nadavu, Laverack, White and Saweri, Dart).

Robust monitoring and evaluation processes remain at the forefront of health promotion's development in the Pacific (e.g., Dart, Piliwas, Laverack, Katz et al). So too the constant need for **capacity-building of health promotion staff and partners** including civil society organizations (e.g., Roberts et al, Harris and McPhail-Bell, McNamara and Rayasidamu, Zandes).

The development of **health promoting policy and legislation** and the need for **greater policy-level engagement** by health promotion practitioners is an important theme (e.g., Allen and Clarke, McNamara and Rayasidamu, Piliwas and Agale, Roberts and Kuridrani, White and Saweri). **Health promotion with young people** is becoming a much-needed focus (e.g., Davidson et al, Harris et al, Roberts, Swinburn et al, Schultz et al). New studies on the **social determinants of health** such as poverty and violence among young people are presented (Harris et al, Roberts). Collectively, these papers point to exciting future directions for health promotion action targeting policy, young people, and structural change in the Pacific.

Collectively, these papers point to exciting future directions for health promotion action targeting policy, young people, and structural change in the Pacific.

Even from the limited range of papers included in this special volume of PHD, it is very apparent that health promotion in the Pacific is indeed coming of age as a theory-informed, evidence-based and broadly accountable practice. Even so, health-promoting capacity across the Pacific continues to require greater investment. To strengthen advocacy for health promotion, more practitioners should document and publish their efforts.

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It's All In

Dr Graham Roberts PhD
Associate Professor, Department of Public Health, Fiji School of Medicine

I'm delighted to be invited to make an editorial comment on this the first of 2 health promotion issues. It's interesting to see such a diverse collection of topics in this issue (and the next) all under the rubric of 'health promotion'. Promoting our health is essential to our survival, so we shouldn't be too surprise to see such diversity: we have been doing health promotion for many thousands of years - although we sometimes get it wrong. The Pacific communities in which we live and work have lots of health promoting strategies, although they don't call them that. Every day in the Pacific people are planting food, fishing, conducting social rituals, relocating, getting married, or just creating something to improve their living conditions. It's all so diverse in fact, that one wonders if health promotion can be called a discipline at all. How can we characterize the diversity of the papers in this edition (and the next) in a single term that captures them all? Are they all consciously 'promoting' the idea of 'health'? Is it all explained by 'advocating', 'mediating' and 'enabling'?

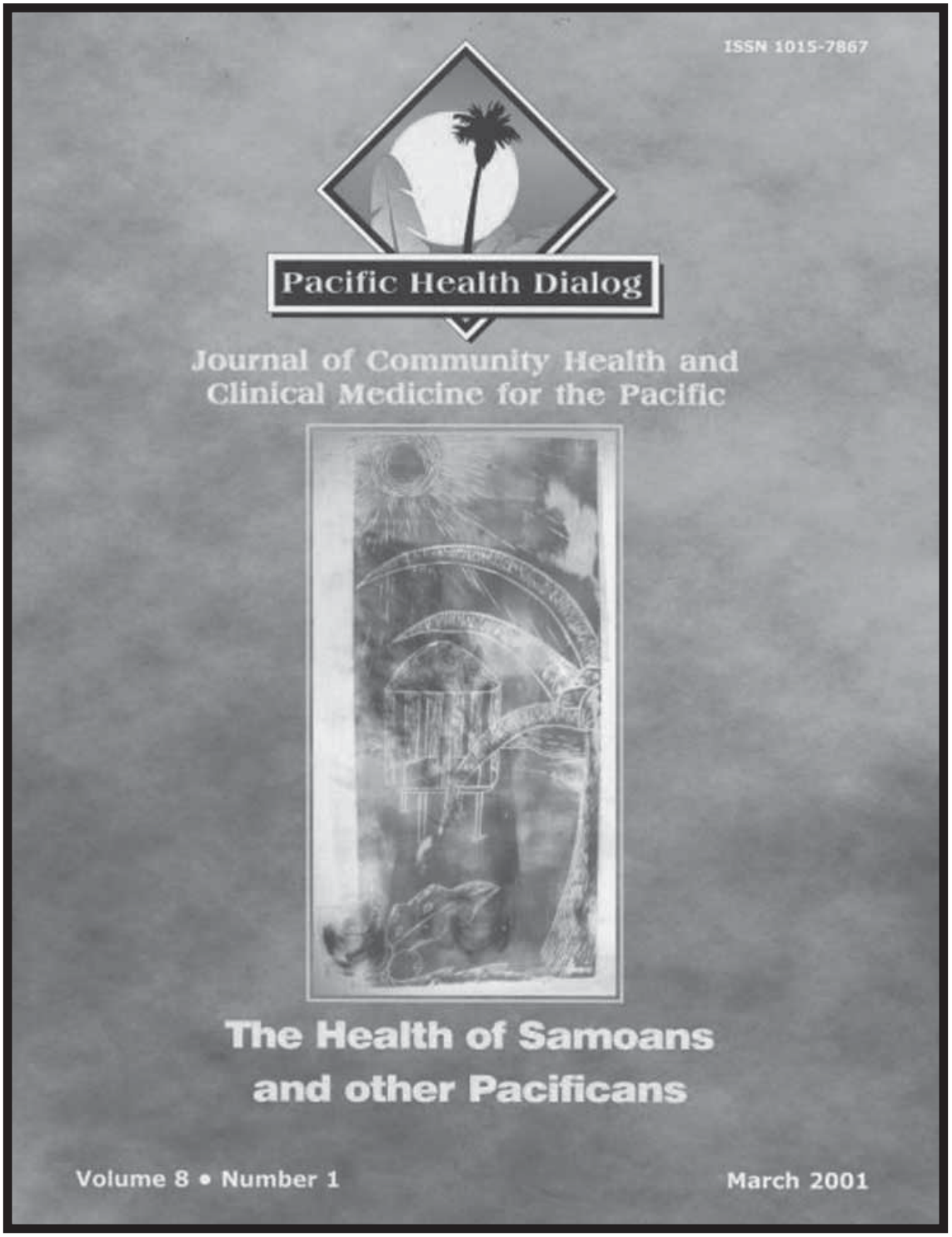
Or are we seeing something else happening in this edition – perhaps a broadening of the issue to which health promotion is applied, so as to include socio-cultural factors, a closer understanding of the mechanisms by which Pacific societies organize to protect themselves and ensure their own health – or by which they sometimes 'get it wrong': in short, a greater awareness of the need for local solutions using local processes developed on local 'theories of action'. This is at the heart of the academic interest in health promotion in the Pacific. How can we organize ourselves better? Why and how do we sometimes 'get it wrong'? What processes work best to bring sustained change? How can we build on what we have?

This edition presents a collection of issues from infant feeding to geriatric assessment – you can see them on the contents page. The reader can decide if we are being over-inclusive here, or if health promotion is naturally eclectic and comprehensive. This is my view, that health promotion is such an interesting area of study and work precisely because it isn't a discipline – it's 'cross-discipline'. A health promoter might be involved in any one or many more issues than those collected here. Many people work to promote health but they might not think of themselves as health promoters – they may not even be in the health sector at all.

Understanding the diversity and the intrinsically survivalist nature of health promotion action takes us directly to our own human ecology – how we interface with the planet and each other. Health promotion can, with this view, be seen in any community (and the individuals who comprise it) by the use of processes and resources that enhance human health. That's why it is so diverse – it's as diverse as our human interests are. And that's why it has a political nature – and why we need cross-sectoral advocacy, mediating and enabling to bring it about. People who may still be unsure of 'what's in' and 'what's out' of health promotion needn't worry - its all in.

"My doctor is nice; every time I see him, I'm ashamed of what I think of doctors in general."

- Mignon McLaughlin, The Second Neurotic's Notebook, 1966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Dietary Intake in Infants and Young Children in the Marshall Islands

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ABSTRACT
Changes in traditional foodways associated with increasing modernization have affected the feeding patterns of infants and young children. Declines in the duration of exclusive breastfeeding have been associated with poor nutritional status and increased morbidity from infectious diseases. We conducted a cross-sectional survey of dietary intake in children under six in four settings in the Republic of the Marshall Islands in Micronesia. The mean duration of breastfeeding in the sample was 11 months, however only 16% of subjects were exclusively breastfed for the first six months, which is recommended by the WHO, UNICEF and other policymakers. Among non-exclusively breastfed infants, supplemental foods were introduced as early as 2 months. Mean intakes for total energy, protein, carbohydrates, fat and iron were calculated for subjects providing recalls. Intake levels for energy, protein, carbohydrates and iron varied by location. Recommendations for future research and program intervention are outlined.

Key Words: *Dietary intake, breastfeeding, weaning, nutritional status, infants, children, Micronesia, foodways*

Introduction

Throughout the developing world, modernization and increasing reliance upon the global economy has effected significant change in traditional foodways, and consequently, infant and child feeding patterns. Of particular concern has been a shift from breast to bottle-feeding, despite policy guidelines from the World Health Organization, UNICEF, and the American Academy of Pediatrics that support six months of exclusive breastfeeding[1,2,3]. Inadequate breastfeeding, premature introduction and increased feeding of complementary foods have been associated with increases in early childhood morbidity and declines in nutritional status[4,5].

Western influences affecting indigenous cultural patterns and foodways vary considerably within and between atolls.

Research was conducted in the Republic of the Marshall Islands (RMI) to examine breastfeeding practices and child and infant feeding patterns in settings representing a continuum of exposure to western, "modernizing" influences. The objectives of this paper are to:[1] describe infant and early childhood feeding in a Micronesian society undergoing significant change in traditional foodways; and[2] examine specific nutrient intake patterns in preschool children in urban and remote locations.

The social, demographic, economic, and nutritional transitions documented throughout Oceania have begun to affect this small island nation where under- and over-nutrition are both prevalent[6,7,8]. In children <5, under-nutrition accounted for 17% of reported deaths in the 1990s[9]. Nutritional survey data suggest that micronutrient deficiency is also a significant public health problem among preschool children in the RMI[10,11,12]. While a significant body of infant and child feeding data exists for other islands in the region, recent data for the RMI are limited[13].

Methods

Study Population.
RMI comprises 28 atolls and many small islets in northeastern Micronesia. While RMI has an estimated area of 750,000 square miles, its dry-land mass totals only 72 square miles[14,15]; the majority of inhabited atolls are quite isolated and distant from the two "urban" centers on Majuro and Kwajalein atolls. Western influences affecting indigenous cultural patterns and foodways vary considerably within and between atolls.

On the two "urban" atolls, imported foods are available through retail and wholesale outlets. Neighbourhood grocery stores and kiosks supply a large variety of "western" foods; white rice, canned meats and fish, snack foods and soda are ubiquitous. Large and small retailers commonly stock and sell outdated or expired goods. Individual retailers' prices vary, but generally run 30-40% higher than stateside.

Neighbourhood grocers commonly sell expensive items in smaller quantities than the supermarkets (e.g., single servings of alcohol, tobacco products, prepared lunch "plates" and other homemade snacks) and most carry snack foods, canned goods and infant formula. The inventories of outer island kiosks are limited to "essential" goods such as rice, white flour, white sugar, canned meat, cooking oil, matches, fuel, soda, snack foods and cigarettes.

Most stores stock a limited selection of imported produce and local agricultural products such as coconut, breadfruit, pandanus, banana, taro, arrowroot, yam, pumpkin, papaya and mango. In addition to countless aquatic species, domesticated pig and chicken may also be purchased at local supermarkets.

The Sample.

This study employed a cross-sectional survey design. Sites were selected purposively to represent a range in population density and degree of urbanization. The most "urban" site, Majuro, is the nation's capital; Laura is a peri-urban area on the Majuro atoll 20 miles west of the capital and the atoll's center of agricultural production. Arno and Namdrik atolls, which have no electricity, public water and sanitation infrastructure were selected as "remote" research sites.

Households, defined as the group of people who regularly eat from the same cook house or "*ainbat*" [iron pot], were identified through a multi-stage sampling procedure[16]. Subjects < 72 months were identified from a subset of 89 households from four sites on three atolls (Table 1). Informed consent was granted by participants in each household

Table 1. Characteristics of Study Sample (n=150)

	N	%
Community		
Rita (Urban)	62	41.3
Laura (Peri-urban)	41	27.3
Arno (Semi-remote)	16	10.7
Namdrik (Remote)	31	20.7
Sex		
Male	79	52.7
Female	71	47.3
Age Group (months)		
Birth to 11.99	14	9.3
12-23.99	35	23.3
24-35.99	29	19.3
36-47.99	21	14.0
48-59.99	32	21.3
60-71.99	19	12.7

Survey Components.

The survey consisted of four data components: socio-demographic, infant feeding history, 24-hour dietary recall, and anthropometry. The first three components will be addressed in this paper.

Demographic data.

Demographic data were collected through a series of 2-5 interviews with the child's primary caregiver (PC) conducted in Marshallese (Table 2).

Infant Feeding History.

An infant feeding history was conducted with each child's PC. Topics included commencement, duration and exclusivity of breastfeeding; utilization and duration of formula feeding; age at introduction and types of early weaning foods. A series of "data-checks" and "probes" were included to ascertain if breastfeeding was the "exclusive" or "predominant" mode of nutrition during the period stated. Variables such as duration of breast and/or bottle-feeding were calculated from the responses to questions on commencement and cessation of breast/bottle feeding. Recipes for traditional weaning foods were collected in each setting.

Table 2. Demographic Characteristics of Subject's Primary Caregiver

	N	%	Mean (s.d.)
Child/Caregiver Relationship	150	100	
Birth Mother	113	75.3	
"Adoptive mother"	19	12.6	
Grandmother	14	9.3	
Other	4	2.7	
Caregiver Age	97	100	31.34 (9.7)
25th percentile	24	24.7	21.37 (1.7)
50th percentile	25	25.8	27.05 (1.0)
75th percentile	24	24.7	32.01 (2.7)
100	24	24.7	45.10 (7.7)
Marital Status	95	100	
Married	35	36.8	
Koba	47	49.5	
Other	13	13.7	
(Single/widowed/separated)			
Parity	96	100	4.02 (2.9)
0-1	19	19.8	
2-3	33	34.4	
4-6	27	28.2	
>6	17	17.7	
Educational Level (Yrs)	94	100.0	9.71 (2.6)
0-8	31	33.0	
9-12	57	60.6	
≥13	6	6.4	

Twenty-four Hour Dietary Recalls.

Three 24-hour dietary recalls were conducted with the PC providing a proxy recall for the subject child. The recalls were conducted on non-consecutive days, using a standardized data collection form. Local utensils and serving dishes were used as recall aids, and the volume of each item was measured using standardized measuring implements. Actual-size food photographs of standard servings were used to validate reported amounts. For each food item, the respondents were asked: food name, brand name if applicable, quantity/serving size, preparation method, amount of serving consumed, and whether the child shared a plate or had his/her own. Breastfeeding mothers were asked to estimate the frequency and duration of feeding episodes, however neither breast milk volume nor estimated nutrient content were included in the dietary analyses due to the difficulty in estimating volume.

Coding and Entry of Dietary Data.

All dietary data were coded and entered into ESHA Food Processor™ (ver. 7.50), a nutritional analysis software program. Recipes for common dishes were collected from respondents and key informants. Mixed recipes were entered as food lists and converted to food items. For commonly consumed indigenous mixed recipes an average recipe was used unless the ingredients were provided for that household's recipe. Nutrient data from The Pacific Islands Food Composition Tables were used[17] for indigenous foods.

Multiple, in-depth interviews were conducted with key informants on Majuro and Arno[18,19] on the nature and composition of weaning foods. Systematic interviewing techniques were used to explore the cultural domain of "weaning foods"[20]. These procedures were used to both generate explanatory hypotheses and to provide an "ethnographic picture" of emic beliefs that could provide context for the quantitative survey data.

Statistical Analyses.

Survey data were managed using Microsoft Access 97® and SPSS 7.5® was used for statistical analyses. Qualitative data were analyzed using Anthropak®. Individual nutrient means are the average of each individual's one-day recalls. Analysis of variance (ANOVA) procedures were conducted to evaluate the equality of group means for dependent variables and inter- versus intra-subject variation of group nutrient intakes. *Post hoc* multiple comparisons were made using Bonferroni's test. The chi-square test for independence was applied to nominal variables.

Results

Infant feeding histories were completed or 137 of 150 subjects (Table 3). Among (ever) breastfed children (n=126), the duration of breastfeeding ranged from 1 to 30 months across sites. Subjects were classified as exclusively breastfed (EBF) if they received no alimentation other than breastmilk, including water. Non-EBF subjects received water or other breastmilk supplements. Overall, the duration of exclusive breastfeeding was 2.45 months; 16.4% of subjects were breastfed exclusively until six months. The youngest quartiles of caregivers had significantly lower parities than the oldest caregivers (2.79 vs. 6.11, p<.001) and breastfed their children significantly longer (12.64 vs. 8.01 months p<.001); this may reflect fewer competing demands on these caregivers within the household from other siblings. No statistically significant differences were found in the PC's education level, nor in the number of children in the household between EBF and non-EBF subjects.

Table 3. Infant Feeding Characteristics (n=126)

Breastfeeding Type	Months of Exclusive Breastfeeding	Age Non-Breastmilk Liquids Introduced (months)	Age Weaning Foods (months)	Total Duration of Breastfeeding (months)
Exclusively BF >= 6 mo (n=22)*	5.92* (0.38)	6.00 (0.00)	6.10 (0.44)	11.59 (7.66)
Non-Exclusively BF (n=104)	1.72 (1.80)	1.80 (1.88)	5.00 (1.14)	10.54 (8.09)
Total (n=126)	2.45 (2.30)	2.34 (2.25)	5.18 (1.13)	10.72 (8.00)
Significance	.0001	.0001	.0001	NS

* Includes one EBF 4- month old infant

The duration of EBF also varied across locales; pairwise comparison of mean differences in duration of exclusive breastfeeding between Laura and Namdrik were found to be significant at p<.05. No locale-BF type interactions were found. The duration of exclusive breastfeeding among infants who were not exclusively breastfed for the recommended six-month period was significantly longer in Laura than in either Rita or Namdrik (Table 4).

Table 4. Months Exclusive Breastfeeding by Atoll and Breastfeeding Type

ATOLL (n)	EBF Infants (duration in months)	Non-EBF Infants (duration in months)	Mean
Rita (Urban) (n=55)	5.84	1.63	2.47
Laura (Peri-urban) (n=16)	6.00	3.17*	3.88*
Arno (Semi-remote) (n=32)	6.00	1.83	2.22
Namdrik (Remote) (n=23)	6.00	0.84*	1.90*
Total (n=126)	5.92	1.72	2.45

*p<.05

Early Complementation and Weaning Foods.

Among non-EBF infants, the most common dietary supplements included water, infant formula, ni (green coconut water), and reconstituted, canned evaporated milk. The mean age at introduction for these items was 1.8 months, versus 6 months for EBF subjects (p.<.001) (Table 3). In Namdrik, children were introduced to non-breastmilk liquids earlier than in any other locale (28.5 days) (p<.05). Weaning foods were introduced significantly earlier among non-EBFs than among EBFs (4.9 months versus 6.1; p<.0001), but no significant differences were observed between study sites (Table 4).

An open-ended inquiry about the child's "first foods," elicited a list of 41 distinct early weaning foods (EWFs) (Table 5). The majority of foods mentioned were primarily traditional and local in origin. Juices, pureed fruits or vegetables accounted for 26% of the EWFs; a principal variant, such as fruit pureed with canned milk, accounted for an additional 5%.

Coconut *(Cocos nucifera)* products are common in traditional Marshallese weaning foods. Ten of the 41 unique items elicited were coconut-based foods. These products may vary significantly in their nutrient composition, typically with the products of embryonic/germinating and immature coconuts being lower in nutrient density. For example, immature coconut meat contains 77 kcals/100g versus 273 kcal/100g for mature flesh[21]. EWFs may contain coconut water, coconut milk or evaporated cow's milk. "*Kalel*," a ubiquitous Marshallese dish which is commonly created with rice, *baanke* (field pumpkin), *ma* (breadfruit), *bop* (pandanus), banana or *makmok* (arrowroot) combines "heavier," more energetically dense coconut products such as coconut cream and/or waine (a diluted coconut cream product) fruits and vegetables. In addition to energetic density, foods based on mature coconut products can be an important source of minerals: a 100-gram serving provides 10% of the iron and +/- 60% and 37% of the daily recommended intake (DRI) for magnesium in children 6-36 months and 4-6 years respectively[20,22].

Another common EWF is "flour gravy" which is typically a suspension of flour and water or flour and diluted canned milk. A similar dish, *likobla*, is created with arrowroot starch and water or diluted canned milk. *Jaibo*, a dough dumpling, is a third variant of the flour and water/milk combination. Flour gravy and *likobla* both have a lower caloric density (70-98 kcal/100g) than *jaibo* (370 kcal/100g), based on the average of key informants' recipes for these dishes. Starch-based soups of varying composition and nutrient density, such as pumpkin, breadfruit or rice, combined with a chicken or fish broth are also found in the Marshallese weanling's diet.

While only three commercial baby food products such as Gerber baby food, and "baby cereal," most specifically oatmeal, were mentioned, these accounted for 24% of all the items elicited. In Namdrik, 18.5% of subjects received commercial baby food products compared to 12% in Arno, 75% in Laura and 88% in Rita.

As with home-prepared food items, the nutrient- and energy-density of these items varied greatly: an average of 40 calories per serving for vegetable puree to 100 calories for a strained meat preparation. Cereals, which ranged from 105-115 kcals/100g, were the most energy-dense of the commercial products named. Reconstituted evaporated milk, mentioned as a drink, rather than a "food," was commonly elicited in the dietary recalls although it was only named twice as a specific weaning food.

Nutrient Intakes.

A nutrient intake profile was created for each subject for the following macro- and micronutrients: total energy, protein, carbohydrates, fat, and iron. Table 6 summarizes the mean, standard deviation, and ratio of within- versus between-subject variance estimate (W/B) for each nutrient by age group. The year-to-year differences were not found to be statistically significant, nor were differences in the observed mean intakes by sex.

Table 6. Mean Daily Intake of Select Nutrients by Age and Ratio of Variance Within-to-Between Individuals.

Age-Group	Energy (kcals)	Protein (g)	Carbo-hydrates (g)	Fat (g)	Iron (mg)
	Mean (s.d.)	Mean (s.d.)	Mean (s.d.)	Mean (s.d.)	Mean (s.d.)
Birth-11.9 mo. (n=3)	1147.83 (176.9)	39.67 (6.6)	150.36 (43.2)	37.42 (22.6)	9.86 (1.6)
12-23.9 mo. (n=21)	1388.26 (446.1)	65.29 (29.7)	175.33 (72.0)	43.96 (20.0)	8.70 (3.6)
24-35.9 mo. (n=21)	1676.74 (454.7)	66.33 (25.3)	231.53 (68.0)	50.17 (16.5)	9.69 (3.6)
36-47.9 mo. (n=21)	1844.53 (781.4)	82.39 (65.0)	247.29 (83.2)	56.07 (32.3)	10.41 (4.0)
48-59.9 mo. (n=32)	1650.16 (533.5)	68.52 (30.4)	229.61 (88.4)	48.12 (16.0)	10.96 (5.7)
60-71.9 mo. (n=19)	1755.08 (763.7)	71.79 (43.1)	255.21 (105.3)	47.89 (21.4)	10.31 (5.9)
Total (n=117)	1646.97 (608.3)	69.83 (39.8)	225.51 (87.0)	48.85 (21.5)	10.09 (4.7)
Variance	W/B 0.75	(across groups) 0.69	0.80	0.96	1.86

Both inter- and intra-subject variation was estimated for each nutrient and is presented as a ratio (W/B). For most nutrients, intra-subject variation is typically greater than inter-subject variation[23,24]. The converse relationship was generally observed in this sample, suggesting that dietary variation may be greater between-subjects than within- among young Marshallese children. A generally homogenous diet may contribute to this pattern.

One exception, however, was the variance of the estimated iron intake which was nearly two times greater within-subjects than between them. This estimate was influenced by several observations reflecting a periodic surfeit of shellfish; a normal variation in island diets. The high W/B ratio suggests that a mean based upon more observations would provide a better estimate of iron intake.

The mean dietary intake of energy, protein, carbohydrates, fat and iron of fully weaned subjects (n=117) was estimated (Table 7). Significant variation in the mean intake of total energy, protein, carbohydrates and iron was found across locales ($p<.0001$). Mean intake of total fat in grams did not vary significantly by location. The most marked difference

in total energy intake was observed between Rita, the most "urban" location and Namdrik, the most "remote" of the four study sites. Subjects in Namdrik consumed 563 more kcals than those residing in Rita ($p<.01$); they also reported significantly higher intakes of carbohydrates, protein, and iron than subjects in Rita. Significantly higher intakes of both total energy and carbohydrates were reported in Laura, the semi-urban location on the west end of Majuro atoll than its urban counterpart. No significant differences were observed for energy, protein, carbohydrates or fat intake between the two "remote" locations, Namdrik and Arno. A mean difference of 3.69 mg in iron intake between Namdrik and Arno was significant at $p<.05$. Significant differences in mean iron intake were observed among all other locations, except Namdrik and Laura, where the mean difference of .83 mg was not significant.

Table 7. Mean Intake of Energy, Carbohydrates, Protein and Iron by Location

Study Site	Energy (kcals)	Protein (g)	Carbo-hydrates (g)	Fat (g)	Iron (mg)
Laura (n=12)	1985.04	77.11	285.40	59.14	13.32
Arno (n=33)	1591.35	69.93	221.98	44.73	8.79
Rita (n=46)	1412.49	53.35	183.69	46.62	8.84
Namdrik (n=26)	1976.38	95.49	276.34	53.30	12.48
Total (N=117)	1646.97	69.83	225.51	48.85	10.09
Pairwise Comparisons	**(I) Site**	**(J) Site**	**Mean Difference (I-J)**	**Std. Error**	**Sig.**
Energy	Laura	Rita	572.55	183.21	0.01
	Rita	Namdrik	-563.89	138.68	0.00
Protein **(gm)**	Rita	Namdrik	-42.14	9.05	0.00
Carbohydrates (gm)	Laura	Rita	101.71	25.27	0.00
	Rita	Namdrik	-92.66	19.13	0.00
Iron (mg)	Laura	Arno	4.53	1.47	0.02
		Rita	4.48	1.42	0.01
	Arno	Namdrik	-3.69	1.15	0.01
	Rita	Namdrik	-3.64	1.07	0.01

Total energy intake was examined as a percent of the (age-specific) Recommended Daily Allowance (RDA)[25] (Table 8). Mean energy intake was > 100% of the RDA for energy from birth through age three though it declined significantly from 142% to 92% by age four. The PRDA increased by approximately 5% during the fifth year; this was not significantly different from the PRDA during the 4th year, but remained significantly different than the PRDA of three-year old subjects.

Table 8. Mean Energy Intake and Percent of Recommended Daily Allowance for Energy, by Age

	RDA	Mean Energy	% Energy RDA
Age Group	Energy	Intake (kcals)	(kcals)
0	850*	1147.83	1.35
1	1300	1388.26	1.07
2	1300	1676.74	1.29
3	1300	1844.53	1.42
4	1800	1650.16	0.92
5	1800	1755.08	0.98
Total		**1646.97**	**1.12**

* Estimate for non-BM foods

Discussion

In this study, breastfeeding, weaning practices and dietary intake patterns were examined in four settings representing a continuum of exposure to western influence. We found that 98.5% of subjects received breastmilk for just less than one year, consistent with reports that children are typically breastfed through *kamem*, the first birthday, a date of considerable cultural significance. Exclusive breastfeeding lasted only 2.45 months and only 16.4% of the sample achieved the recommended six months of EBF.

The introduction of non-BM liquids and early weaning foods were both characterized by a six-month range, with liquids entering the diet between birth and six months and weaning foods anywhere from two to eight months. Low rates of exclusive breastfeeding through six months may be implicated as a public health issue of some significance, given its association with infant morbidity, particularly diarrhea, and ARI in other parts of the world.

Location-specific patterns related to the duration of EBF and age at introduction of non-breastmilk liquids and weaning foods were unexpected. Remote locations were characterized by the shortest periods of EBF and earlier introduction of liquids and weaning foods than their urban and peri-urban counterparts. This may be attributable to time allocation patterns of female caregivers in each area. In Namdrik, subsistence activities such as food collection, production and craft work may, like work in the formal sector, be a barrier to EBF. The pattern was not entirely clear, however, as subjects from Laura, the peri-urban location, enjoyed a longer period of EBF, and later introduction to liquids and weaning foods than their urban counterparts. Urban and *peri*-urban mothers may have greater exposure to health education messages which support longer, exclusive breastfeeding. The variation in patterns of EBF duration merit further research with a larger sample.

Current recommendations from WHO and UNICEF support six-months of exclusive breastfeeding followed by "nutritionally adequate" weaning foods. The composition of weaning foods in the Marshall Islands varied greatly in terms of origin, caloric and nutrient density. Acculturative processes clearly affected the dietary preferences of caregivers, particularly in areas where consumers had a

choice. Gerber baby foods and cereals, infant formulas, "junk" foods, candies and instant coffee were items recalled predominately among the urban sample. Prepared, store-bought infant foods were considered "healthy foods" and were popular, despite the high per-serving cost relative to traditional preparations such as fruit or vegetable purees. One mother reasoned that the instant coffee she bottle-fed her 10 month-old infant "must be good because it's American and it's expensive." Uninformed choices such as this may have inadvertent but significant effects on the diet, such as caffeine-induced appetite suppression and diuresis.

This perception of imported "healthiness" also held for canned evaporated milk, but rather than being a positive feature of the diet, it was typically a poor food supplement due to excessive dilution. Caregivers rarely diluted the solution 1:1 as directed, instead diluting it 1.5 to 5 times with a resulting decrease in nutrient density. Some caregivers explained that over-dilution was due to cost and to taste: children unused to drinking milk preferred it diluted. Practices dictated by dietary preference are difficult to change and may diminish nutritional adequacy, particularly in the case of weaning foods. Additional research into dietary preferences in early childhood is warranted, particularly to aid in developing behavioral interventions to increase the nutrient density of common weaning foods.

Further research on the composition of traditional weaning foods in RMI may contribute to the promotion of higher quality weaning foods and improvement of existing traditional recipes (e.g., more nutrient-dense preparations) in urban and remote Marshallese settings.

This study had several limitations. Accurate estimation of serving size posed a significant challenge, particularly for fish, a dietary staple. Serving sizes of fish were found to be uniformly large across the sample, largely because respondents either described the servings in spoon measures or by using the index finger and hand as a guide to the fish size, a technique used in previous surveys[11]. In spite of this methodological problem which may have resulted in an overestimation of protein, there is reason to believe that the cyclic and periodic nature of the diet—particularly in remote areas—creates an intermittent surfeit of protein in the diet which may result in variability in the estimate.

The inability to measure breastmilk consumption in this setting poses a second limitation. Efforts to characterize the nutrient intakes of breastfed children should include nutrients provided by breastmilk. Estimation of breastmilk intake by pre- and post-feeding weight measurements or more precise biochemical measures were both infeasible and culturally unacceptable in this population.

A third limitation is the lack of a socioeconomic status (SES) indicator. SES data were collected via a "material style of life" scale during the first wave of data collection in 1996. Severe damage caused by Typhoon Paca in 1997 resulted in major economic losses and this made a scale based on "material style of life" invalid during the years immediately following the typhoon.

Despite these limitations, estimation of nutrient intake was accomplished successfully through the use of repeated 24-hour recalls. Though somewhat labor-intensive given the use of measuring implements, food models and photos to assess serving size, it was nonetheless the method of choice given the low levels of literacy in RMI. The repeat visits also provided an opportunity for rapport-building which facilitated more in-depth qualitative interviews later in the study.

The data suggest that for the nutrients examined, there was less variation in nutrient intake within individuals than between, with the exception of iron in females. While somewhat unusual, this was not surprising in this setting given the overall homogeneity of the diet. While traditional recipes and preparation methods varied across locales, ingredients often varied little, incorporating island basics such as fish, coconut, pandanus, and breadfruit with imports such as rice, flour or canned milk and cooking oil.

Site-specific differences in nutrient intakes were observed among fully-weaned subjects. The highest intakes of energy, carbohydrates, fat and iron were reported in Laura, the peri-urban site; intakes on Namdrik, the most remote site, were unexpectedly similar to those in Laura. Rita reported the lowest mean intakes for all nutrients except iron. At first glance, this may appear counter-intuitive, as one would think the urban diet would be more nutrient-dense given the role of imported foods in the diet. Total intake rather than nutrient density may be a differentiating factor. Urban children may have a lower overall intake than their rural counterparts because caregivers are present less in the home because of work obligations or because urban households, more reliant upon the cash economy, have a greater dependence upon store-bought foods requiring both cash and preparation rather than foods that can be gathered without preparation, such as fish or fruit. Anecdotal data also suggest that while the inhabitants of urban Majuro have higher rates of formal employment and thus higher (reportable) incomes than their rural counterparts, the cost of living is greater, leaving urban dwellers with less disposable income for food purchases.

While the urban setting had generally been believed to confer an advantage, research suggests that the *type* of urban setting differentiates risk from advantage in understanding health disparities in developing country settings[26]. Although SES data were not collected during this phase of the study, government data suggest that the country's urban centers are the most impoverished areas. Environmental risk factors characteristic of urban centers such as overcrowding, poor sanitation, and an inadequate supply of potable water, have the potential to affect child health through a variety of pathways including increased morbidity from diarrhea, ARI, and other infectious diseases that may, in turn, affect both intake and metabolism of nutrients.

Conclusion

Nutrition education is a valued and integral part of the current Ministry of Health Primary Care Program. Although efforts are underway to increase the rates of exclusive breastfeeding and maternal knowledge around infant and child feeding, results from this study suggest that additional research could contribute in several ways. First, the role of extended family members and health care providers on the decision-making processes involved in breastfeeding and infant feeding practices should be examined further. In addition, the degree to which infant and child feeding is passive or active, and how this varies by location, SES or gender has not been fully examined in this setting.

Health education strategies currently used in the RMI require evaluation to understand factors affecting the low rates of EBF despite a widespread and primary health care-integrated campaign to promote EBF. These data may inform future efforts to prolong the duration of exclusive breastfeeding, as well as to appropriately time the introduction of weaning foods. Further research on the composition of traditional weaning foods in RMI may contribute to the promotion of higher quality weaning foods and improvement of existing traditional recipes (e.g., more nutrient-dense preparations) in urban and remote Marshallese settings. Given the high rates of under-nutrition in RMI, improvements to the weaning diet may be of particular value to this at-risk segment of the Marshallese population.

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Table 5. Weaning Foods Reported in the Marshall Islands (n=132)

Food category and names	Frequency	Percent	Energy density
Fruits and Vegetables			kcals/100g
Breadfruit	15	3.71	71
Papaya/Banana/Pandanus/Juice or Puree	27	6.68	39/103/144/
Pumpkin/sweet potato/yam puree	13	3.22	20/105/105
Mashed Potato	3	0.74	83
Mokwan (Pandanus juice cooked and preserved)	58	14.36	326
Banana/ Papaya/ Pumpkin/ Pandanus/ Breadfruit w/			
Canned-milk	21	5.20	
Subtotal		**137**	**33.91**
Coconut recipes			
Rice kalel	7	1.73	142+
Breadfruit kalel or breadfruit jekaro (coconut sap)	15	3.71	33
Pandanus /Pumpkin kalel	18	4.45	
Flour Gravy w/ kalel	2	0.50	=/- 98
Tubur (Variant of banana kalel, steamed in pandanus leaf)	11	2.72	
Aikiu (Spongy coconut meat and arrowroot) or w/ papaya	8	1.98	81
Iu (Spongy meat of sprouted coconut)	2	0.50	72
Subtotal	**63**	**15.60**	
Mixed dishes			
Flour gravy (Flour with water or milk)	39	9.65	98
Jaibo (Dough dumpling)	10	2.47	70-375
Likobla (Arrowroot starch and water)	8	1.98	+/- 30
Flour gravy w/ banana	1	0.25	

cont. next page

Food category and names	Frequency	Percent	Energy density
Soup Rice Fish	9	2.23	
Soup rice	5	1.24	
Jokkwop (Soup w/ soft rice and breadfruit) or pumpkin	14	3.47	
Meat/fish gravy	2	0.50	183-214
Fish/crab	2	0.50	
Subtotal	**90**	**22.28**	
Commercial products/ Miscellaneous			
Gerber products/"baby food"	70	17.33	40--100+
Cereals/oatmeals	27	6.68	379-398
Plain rice	6	1.49	130
Canned, evaporated milk	3	0.74	127
Ramen	3	0.74	480
Anything/ Table Food/Misc	5	1.24	
Subtotal	**114**	**28.22**	
Total Items Elicited	**404**	**404**	**100.00**

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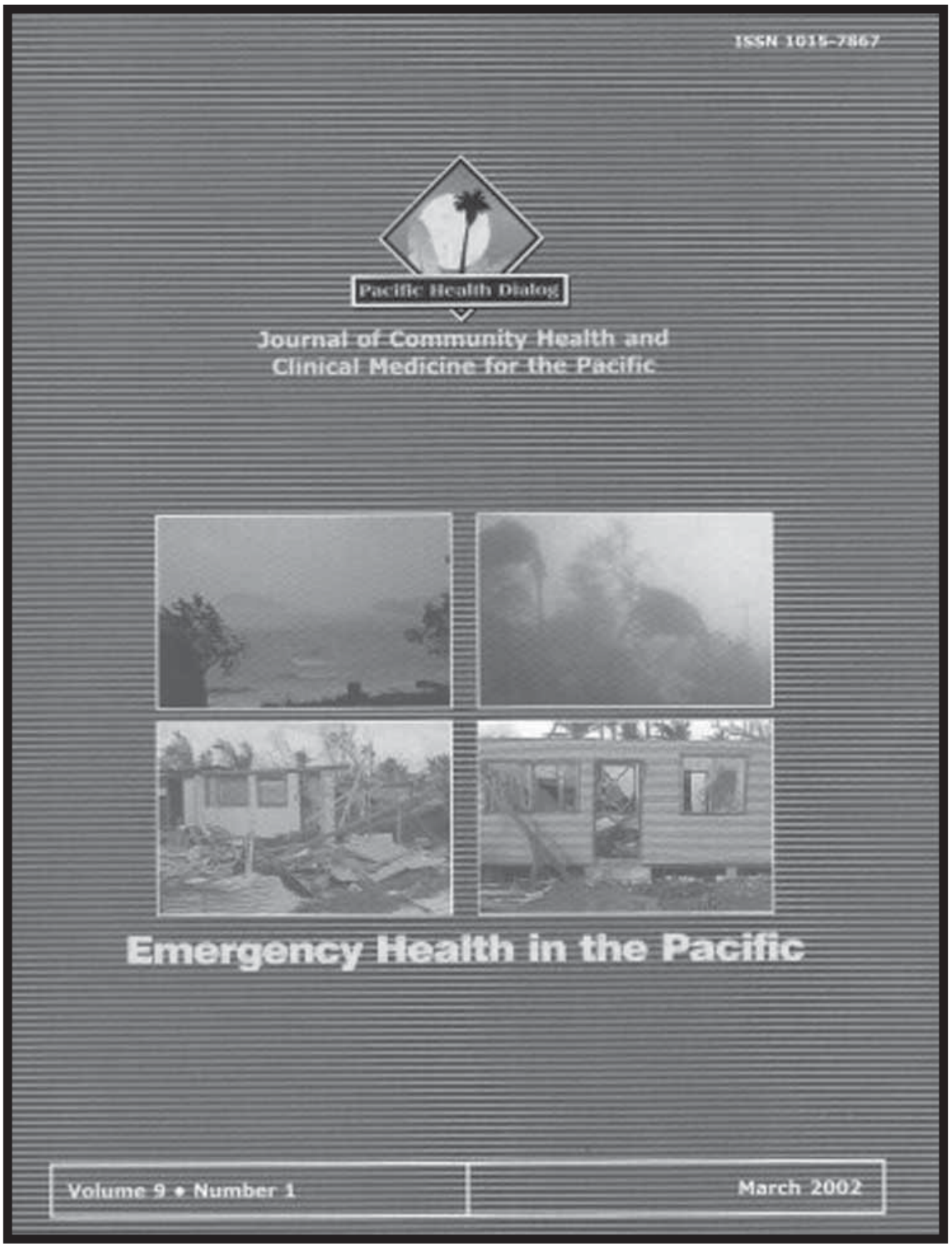
"There is nothing like looking, if you want to find something. You certainly usually find something, if you look, but it is not always quite the something you were after."

- J.R.R. Tolkien quotes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Geriatric Assessment during Health Promotional Home Visits by Zone Nurses of the Suva Subdivision, Fiji

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ABSTRACT
The elderly population of Fiji is around 7% of the total national population and is predicted to increase to 23% in 2050, yet the country does not have a standard procedure that assesses their health and well-being. A survey was carried out to explore current Geriatric Assessment Practice (GAP) amongst the zone nurses of the Suva subdivision during health promotional home visits. Overall the GAP of nurses is poor. Nurses had little awareness of assessment procedures and they constitute. The lack of a standard geriatric assessment protocol that can be used by all zone nurses is evident. More research on the elderly should also be carried out to provide better information and improve nursing practice.

Introduction

Population aging has been a main feature of the population trend of the 20th century with most elderly people living in developing countries.[1] Decreasing fertility and mortality rate has proportionally resulted in less children being born and more people reaching an older age today than in previous years.

Fiji's elderly population of those 60 and above is currently estimated at 58, 000 or 7% of the national population, and this has been predicted to increase to 305, 000 or 23% of the national population in 2050.[2] In 1995 life expectancy was 72 years, while birth rate had declined to 2.4% from 3.2% in the 80s[3]. National estimates for 1999 by WHO show that non-communicable disease were the most common non-psychiatric conditions amongst the elderly in Fiji[4]. Widowed elderly women are one of the most disadvantaged groups in Fiji, and the elderly population was less likely to be educated or employed when compared to their younger counterparts.[5]

National estimates for 1999 by WHO show that non-communicable disease were the most common non-psychiatric conditions amongst the elderly in Fiji[4].

Geriatric Assessment is a Multidimensional process designed to assess an elderly person's *functional ability, physical health, cognitive and mental health, and socio-environmental situation*.[6] It differs from a standard medical evaluation by including non-medical domains; by emphasizing functional ability and quality of life, and often by relying on Multidisciplinary teams. Geriatric Assessment is often a part of preventive home visits that are carried out by primary care staff amongst independently living elderly people in the community. Geriatric Assessment can be used in primary prevention to assess general wellbeing and risk factors; secondary prevention to assess preclinical disease states and tertiary prevention to assess need for rehabilitation.[7] A systemic review in 2000[8] had shown that health promotional home visits with assessment did not improve outcomes of physical or psychological function, falls, admissions to institution, or mortality. However two later meta-analysis have shown that home visiting programs that offered health promotion programs and preventative care reduces mortality and admission to long-term intuitional care,[9] and are effective if interventions are based on multidimensional geriatric assessment and frequent follow-up visits.[10] This study will explore current Geriatric Assessment Practice (GAP) amongst zone nurses during Health Promotional home visits. It will find out how they carry out *Multidimensional Assessment and Multidisciplinary Referral* amongst the elderly.

Methodology

The whole population of 23 active zone nurses within the Suva Subdivision was used for the survey. The target population was defined according to the zone nurses' familiarity with their respective zones and their experience as community nurses. A questionnaire was used to assess GAP through two main activities – *Multidimensional Assessment and Multidisciplinary Referrals* of the elderly. A point score was allocated to the responses, with the most favourable response having the most points. Scores ranged from zero to a maximum of eighty two. Variables that were initially defined as nominal or ordinal data were changed to ratio data by the allocation of a points score. The total GAP score therefore is a rough indication what nurses assess during home visits. It should be emphasized that the questionnaire is not a validated measure of GAP competency.

A pilot study was carried out first amongst eight nurses who had previously worked in a Suva zone within the past year. All are still working within the Suva subdivision but are not involved in zone nursing activities. The nurses were asked to fill in a draft questionnaire and comment on its clarity and relevance. Variables were also cross-checked and consequently some had to be omitted because the nurses' responses were inconsistent. The final questionnaire was

then distributed to the zone nurses to self-administer. Prior to this a consent letter was obtained from National Health Research Council of Fiji (NHRCF), which was given out with the questionnaires. The SPSS program was used to assist with the tabulation and analysis of variables.

Results

The survey was able to achieve a 100% response from the zones that had a residing nurse. Inclusion of the vacant zones still presents a valid response rate of more than 85%. Most nurses who took part are young and of Fijian ethnicity

Over 60% of the nurses were able to define Geriatric Assessment as multi-dimensional care of the elderly, but only two nurses were able to define it as an activity that requires multi-disciplinary team effort (Table1). Disturbingly, five nurses did not even mention elderly care, when they were asked to write down their definition of Geriatric Assessment. Only four nurses have had any training in Geriatric care which had happened more than two years ago.

TABLE 1. Distribution of Geriatric Assessment Definition and Training

VARIABLES	Freq.	% (n=23)
Definitions		
Multi-dimensional assessment	14	60.9
Multi-disciplinary assessment	2	8.7
Care of the elderly	18	82.6
Nurses trained in elderly care	**4**	**17.4**

Most nurses are new to the profession with their nursing experience averaging at 9.3 years (Table 2). This observation is reflected in the professional areas where most experiences average below 4 years. Personal experience of living with or caring after an elderly relative was longer with an average of 5.65 years but insignificant when compared with clinical experience; rural experience; elderly exposure; time in zone and time in medical area (F ratio of 1.41 < the critical value of F6, 132 = 2.29 at $\alpha = 0.05$)

There is one outlier; a nurse who has worked for over 30 years and has spent 16 years in clinical and 12 years in rural service.

TABLE 2. Descriptive statistics of different professional experiences by duration

EXPERIENCE	MEAN YEARS	STANDARD DEVIATION
Years of service	9.3	6.064
Clinical nursing practice	3.22	4.045
Rural nursing practice	2.61	2.840
Exposure to elderly people	5.65	7.177
Time in Zone	2.61	1.852
Time in Medical Area	3.26	1.959

Description of Geriatric Assessment Practice (GAP) amongst Nurses

The mean of the total GAP score amongst the nurses is significantly less than the comparison score at $p<0.001$ (Table 3). The average score of the activities that make up GAP show a variable result. The *Multi-dimensional Assessment* average score is also significantly lower than its respective comparison score, while the *Multi-disciplinary Referral* average score showed no significant difference. The limited questions to assess *Multi-disciplinary Referral* have resulted in this inconsistency, because it is evident from the results that this activity is not done adequately by the nurses.

TABLE 3. Result of One-sample t-test (one tailed) between GAP score and comparison score

	t score	Mean	St. Dev.	Comparison score[t]
Multidimensional assessment score	-11.882***	10.09	5.616	20
Multidisciplinary referral score	-1.643	3.26	2.158	4
TOTAL G.A. PRACTICE SCORE	**-4.748*** **	**15.91**	**5.616**	**24**

***$p<0.001$

[t] 50 % score of total achievable points

Nurse responses to frequency of home visits and making referrals are inconsistent. Most nurses make at least two or more home visits per year to each elderly person in the zone, while around 17% of nurses never make any such home visits at all (Table 4). Around 30% of nurses make a one-and-only referral for each elderly member in their zone (Table 17). Inconsistently, an equal number make at least two referrals per year for each elderly member while over 20% never make any referral at all.

TABLE 4. Frequency of geriatric home visits and referrals

FREQUENCY OF HOME VISITS	Freq.	%
Never	4	17.4
Only once	1	4.3
Annually	2	8.6
2 -3 times a year	10	43.5
More than 3 times a year	6	26.1
TOTAL	**23**	**100***
FREQUENCY OF REFERRALS		
Never	5	21.7
Only once	7	30.4
Annually	4	17.4
2 -3 times a year	6	26.1
More than 3 times a year	1	4.3
TOTAL	**23**	**100***

*after rounding off

Nurses significantly assess more ***Health*** dimensional issues when compare with other dimensions (P<0.05) (Table 5). This is expected since nurses would be more familiar with health issues. Only around 11% of issues assessed are from the ***Social*** and ***Carer*** dimensions. ***Environmental Risk*** dimension has the least variation with the nurses asking only five types of issues. In total nurses average around ten issues per respondent with 48 different issues being assessed overall.

TABLE 5. Range and frequency of issues assessed within the different dimensions

DIMENSIONS	RANGE OF ISSUES		NUMBER OF ISSUES		
	Freq.	%	Freq.	%	Mean
Health concerns	14	29.2*	85	35.7	3.7*
Financial concerns	6	12.5	37	15.5	1.6
Functional ability	8	16.7	32	13.4	1.4
Environmental risk	5	10.4	31	13.0	1.3
Social concerns	8	16.7	27	11.3	1.2
Carer concern	7	14.6	26	10.9	1.1
TOTAL	**48**	**100**	**238**	**100**	**10.3**

*<0.05

Despite the dominance of *Health* issues, nurses also frequently enquired about source of financing (Table 6), followed by enquiries on Hypertension, Diabetes and Diet, which all scored above 50%. In the *Health* dimension 26% assess mental and cognitive functions, while only 3 nurses asked about bowel habits and urinary problems. It is evident that the nurses lacked awareness of medical problems that commonly affect the elderly and based their medical assessment on the problems that affect the general population.

Vital issues in the other dimensions pertaining to the elderly are being left out completely. Only two nurses assessed self-grooming and self-hygiene in the *Functional Ability* dimension. Only one nurse asked about marital status within the *Social* dimension, and noone asked about employment status. Most assessment on *Environmental Risk* is about safety of the house and accessibility of its amenities. For the *Carer* dimension, most assessment focused on the carer's capability to carry out the task; however, some nurse also queried the adequacy of care given and the attitude of carer.

Nurses are unaware of other Government and Non-government institutions that cater for the needs of the elderly. Of the referrals made more than half are made to doctors and the Social Welfare Department. Other referrals are made to the Red Cross and to residential homes for the elderly. Five nurses also make referrals to physiotherapists.

Discussion

The age and ethnic makeup of respondents are similar to the national composition of nurses, with young Fijian nurses making up the bulk of the nursing profession. Older more experienced nurses and Indo-Fijian nurses tend to make-up the bulk of exodus overseas or to private health institutions. The nursing shortage has also increased the intake of student nurses in nursing school over recent years which have led to more young nurses graduating and entering the nursing workforce. The average time that a nurse spends in the zone and medical area could be considered to be relatively short in a program that requires familiarity with elderly community members and continuity of care. The exodus of nurses is also a factor behind the observation, as nurses are frequently transferred to counter the increasing number of vacant positions.

The low level of knowledge on Geriatric care clearly highlights the shortfall of the National Program on the Health Care of the Elderly (NPHCE), which featured training of health workers in three of its objectives. In addition the country does not have a gerontology nurse or gerontologist, while the training institutions for nurses and doctors do not have any geriatric curriculum. Globally the lack of geriatric education and the shortage of geriatric professionals are problems currently faced,[11] and it only adds to the local demise of geriatric training.

Description of Geriatric Assessment Practice (GAP) amongst Nurses

Nursing assessment mainly focused on health issues but did not emphasize issues from other dimensions. This is similar to the observation in a qualitative study that observed that district nurses mainly focused on medical issues but did not emphasize *Social* concerns[12].

Evidently the nurses' familiarity with medical issues biases assessment towards this dimension. In addition the lack of knowledge on geriatric care and a confusion of roles with Social Welfare officers, Environmental Health Officers and other workers limits the activities of nurses in the other dimensions. The later issue is due to the lack of interaction with the relevant Government Departments and NGOs, as nurses are not aware of the services that these institutions offer on geriatric care. The current study shows that with a lack of geriatric training, nurses are using general community assessment and screening practices to screen the elderly.

They routinely screen for hypertension and diabetes, and enquire about medical clinics and medication, but fail to screen for conditions that commonly afflict the elderly, such as renal incontinence, irregular bowel movements, mental function, and trauma due to falls. No attempt was made to assess health-seeking behaviours and choice of treatment since they have an affect on the compliance of the elderly to follow assessment recommendations. Plange had observed in an earlier study that most of the Fiji elderly population use traditional medicine despite consulting a health worker frequently[5].

The high number of enquiries that the nurses make on *source of finance* can be an indication of the squalid living condition amongst the elderly people. Poverty is a common attribute of the elderly in Fiji because they are less likely to be employed when compared to their younger counterparts [5].The retiring age for most civil servants has been reduced to 55 years as the Government tries to cope with the huge

TABLE 6. Frequency and types of issues nurses assess within each dimension.

DIMENSIONS	ISSUES	Freq.	% (n = 23)
Health	Hypertension	12	52.3
	Diabetes	12	52.3
	Diet	12	52.3
	Eyes / Ears	10	43.5
	Medication / clinic	7	30.4
	General appearance	6	26.1
	Mental / cognitive	6	26.1
	Musculoskeletal	6	26.1
	Smoking / alcohol	4	17.4
	Exercise	3	13.0
	Genitourinary / gastrointestinal	3	13.0
	Cardiovascular	2	8.7
	Others	2	8.7
	TOTAL	**85**	
Finance	Source of finance	13	56.5
	Social welfare assistance	11	47.8
	Cost of living	6	26.1
	Medication / clinic cost	3	13.0
	Employment status	3	13.0
	Others	1	4.3
	TOTAL	**37**	
Functional Ability	Independence of movement	11	47.8
	House work	6	26.1
	Gardening	5	21.7
	Self grooming / dressing	2	8.87
	Self hygiene	2	8.7
	Food preparation	2	8.7
	Community work	1	4.3
	Others	3	13.0
	TOTAL	**32**	
Environmental Risk	Accessible amenities	11	47.8
	Housing	9	39.1
	Indoor safety	9	39.1
	Pollution	1	4.3
	Others	1	4.3
	TOTAL	**31**	
Social	Attend social / church functions	7	30.4
	Living arrangement	4	17.4
	Travelling	4	17.4
	Having visitors	4	17.4
	Take part in decision making process	3	13.0
	Relationship with family	2	8.7
	Marital status	1	4.3
	Others	2	8.7
	TOTAL	**27**	
Carer	Health of carer	6	26.1
	Financial status of carer	5	21.7
	Relationship with elderly	5	21.7
	Type of care given	5	21.7
	Duration of care	2	8.7
	Attitude of carer	2	8.7
	Problems encountered with elderly	1	4.3
	TOTAL	**26**	

number of university graduates who are unemployed. The national poverty report shows an increasing number of elderly people living in hardship[13]. Other issues that require greater attention amongst nurses are employment status, asset ownership and unbefitting responsibilities that incur financial strain on the limited resources of the elderly. The latter often arise from married adults still dwelling with their parents, or grandparents being given the child-rearing task while the parents look for work[5].

Nurses placed little emphasis on functional activities that are essential for daily living like feeding oneself, self-dressing and grooming oneself and self hygiene. Nurses may see declining functional ability as a normal ageing process, requiring attention only if it causes disease to the elderly. Aging therefore is negatively associated with disease. This phenomenon was described by Wells who found that lack of knowledge about normal ageing processes amongst nurses in Australia had given rise to negative attitudes[14].

Most assessment on *Environmental Risk* focuses on the accessibility of amenities like toilets and bathrooms. Lack of awareness on what environmental risk constitutes; the absence of an assessment procedure and a confusion of roles with Environmental Health Officers are limitations that prevent proper assessment of this dimension.

Very little attention has been given to assessing *Social* concerns. This had been explained by Worth[12] to be due to unfamiliarity with social issues amongst nurses. Nurses often identify elderly members in need of social or financial help and let Social Welfare workers do the assessment themselves. This is evident in the amount of referrals sent to the Social Welfare Department. The prevailing low geriatric nursing knowledge and the absence of an assessment procedure further disables proper assessment of social issues.

The nurses rarely assess the *Carer as* it is a fairly new concept globally[15]. The nurses are able to highlight important issues of caring capability, relationship with the elderly and caring arrangement. Emphasis is to be stressed on the need to make Carer assessment an integral part of the assessment process by all nurses.

Difference between Nurses' score and Comparison score

Geriatric Assessment Practice (GAP) scores amongst nurses are low. This result is consistent with the low level of knowledge on geriatric care identified above. The National Program on the Health of the Elderly (NPHCE) needs to be reviewed because knowledge on key issues of assessment, referral, and training are lacking amongst the nurses.

Multi-dimensional Assessment practice is limited because nurses lack a systematic method of doing assessment. Nurses do not have a check-list of issues to ask within each dimension, and are unfamiliar with the different dimensions that should be assessed in elderly people. Worth found similar results where nurses had no specific guidelines on how the assessment is supposed to be carried out.[12] The inconsistent results within *Multi-disciplinary Referral* practice have greatly reduced the validity of the nurses' scores in this area.

Making no referrals or making a one-and-only referral for each elderly member is not appropriate. Further investigation needs to be carried out to find out the cause of this discrepancy, although the high workload and the lack of geriatric awareness and assessment procedure would be the main factors. Most referrals are to doctors or Social Welfare Department and little awareness is present of other local institutions that deal with the problems of the elderly in the other dimensions. This includes international non-governmental organisations and various Government Departments funding projects that can be channelled towards the needs of the elderly.

The MOH together with relevant Non-Governmental Organisations and Government Departments are to develop a Geriatric Assessment protocol that is to be used nationwide.

Study Limitations

The lack of a valid instrument to assess GAP competency is a limiting factor. The questionnaire used in the current study needs to be further developed and standardized with valid practice assessment instruments and methods. In addition the lack of literature on a standard comparison score to indicate competent nursing GAP was another limitation. A comparison score needs to be developed from an instrument or method that validly measures GAP.

Recommendations

Institutions involved in training and awareness on geriatric care are to commence efforts to better geriatric care amongst nurses, and focus on the normal process of aging and the different dimensions that are affected by it. Medical conditions that commonly afflict the elderly are to be part of training.

Common elderly concerns of finance, social interaction, functional ability and environmental risks are to be stressed, and local examples be used as much as possible.

Nurses are to be made aware of the different institutions that they can make referrals to, if there is a need for further assessment and assistance. They should be aware of the type of specialized assistance that is offered and how it can be accessed.

The MOH together with relevant Non-Governmental Organisations and Government Departments are to develop a Geriatric Assessment protocol that is to be used nationwide.

It is to have a checklist of issues that assesses different dimensions and must work out the frequency of follow-up assessment for all elderly individual based on the types of problems that have been identified. The National Geriatric Assessment Protocol (NGAP) must also standardize a referral

method between the nurses and the different specialized care of the elderly. It must work out the frequency of referrals for follow-up specialized assessment based on the types of problems that have been identified.

Finally a bigger study needs to be done that is more representative of the nation's zone nurse population. This is to be part of the development of the NGAP. Information needs to be obtained on the ability of nurses and MOH to carry out geriatric assessment procedures given the limited numbers and resources that are available

Acknowledgement

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Attempted Suicide in Western Viti Levu, Fiji

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Abstract:
Case records were reviewed of 132 people referred to the FSEG in Lautoka from January 2004 to December 2005 following an attempt at suicide. Seventy five percent of the study group was under age 32, 90% were Indo-Fijian and 66% female; these characteristics were significantly overrepresented compared to the demography of the source population. Findings show that social stress constitutes the primary reason for attempted suicide among all ages, genders, religions and ethnicities and suggest that Fijians and Christians may also be reacting to economic factors. A control group study of non-suicidal persons under stress is needed to distinguish characteristics of suicide attempters. Our tentative findings agree with the current perception and literature on selective demographic risks for attempted suicide – young age, Indian ethnicity, female gender and social stress.

Introduction

The early development of counseling services in Western Viti Levu by the Family Support and Education Group (FSEG) has begun to demonstrate the extent of the need for counseling by people undergoing psychological and social stress. This area of social services has not been a priority in Fiji and we, as a society, have 'lived with' high levels of social stress – and with the consequent high levels of suicide and attempted suicide. On international comparisons, Fiji has high rates of suicide and attempted suicide within sub-groups of the population[1].

The literature, national statistics and public perceptions suggest that the sub-group of suicide attempters share particular demographic and social characteristics: Indian ethnicity, female gender and relationship problems. This paper is a review of 132 case notes of people referred by Lautoka Hospital to FSEG for counseling following a suicide attempt in 2004-2005. We were interested to describe the social situation or other precursor that led to the attempted suicide and in identifying whether the characteristics associated with suicide were also associated with attempted suicide.

On international comparisons, Fiji has high rates of suicide and attempted suicide within sub-groups of the population[1].

Literature review

The literature for Fiji is reviewed in 2 parts to illustrate the extent of the problem and to identify particular demographic characteristics that distinguish between suicide completers and suicide attempters are identified.

The population of the Western Division was 297,184 in 1996. The census of 1996 described the population of all Fiji as: 51% Melanesian Fijian, 42% Indo-Fijian and 7% of other ethnicity; 51% male and 49% females; 63% of males and 62% of females under age 30; 57% Christian, 33% Hindu, 7% Moslem and 3% or other religions[2].

Completed suicide

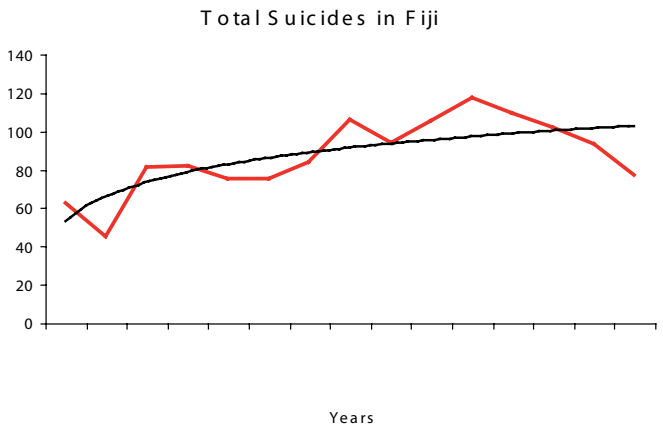
Lal[3] in reviewing the history of the Indian indentured labourers in Fiji found that 300 Indians had committed suicide between 1884-1925, that the suicide rate for males was twice that for females, that the high rate of 78 per hundred thousand in Fiji compared to a low 5 per hundred thousand in the provinces in India from which these people had come was 'a serious moral indictment of the indentured system in Fiji'; and, that the rate was higher among Hindus than Muslims. These early associations of suicide with Indian ethnicity and Hinduism recur throughout the literature.

Pridmore[4] reviewed cases of completed suicide in Lautoka in the period 1986-1992 and estimated an average annual suicide rate of 13 per 100,000 of which 9 per 100,000 were hangings and 4 per 100,000 were poisonings. Chang, working from police records for the period 1993-98 found, for the whole of Fiji, a total of 516 (average 86 p.a.) suicides, of which 66% were by hanging and 12% by poisoning. In addition to these, 622 attempted suicides were also recorded, (average 102 p.a.) a combined average of 188 suicide attempts per annum for this period[5].

Recent Fiji Police Force statistics reveal that these high numbers have continued, while the literature shows an increasing trend from the 1960s. Ree[6] had shown that 308 suicides were notified in Fiji for the period 1962 to 1966, an average of 62 p.a. The 2001 police records reveal 117, by far the highest recorded figure for any year - a rate of 10.3 per 100,000. After 2001 the count of 77 deaths by suicide in 2005 shows a decline to 9.8 per 100,000.

Although the graph below shows a fall in suicide numbers, a logarithmic line drawn from the data suggests that the trend is still increasing. It will take one or two more years of data to determine whether the annual decline in numbers continues, and begins to reverse the increasing trend.

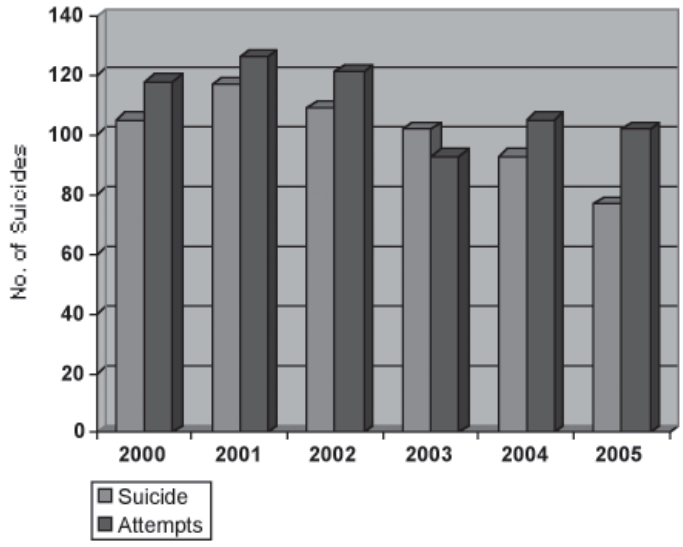
Figure 1. Suicide numbers and trend 1960's to 2005



Attempted suicide.

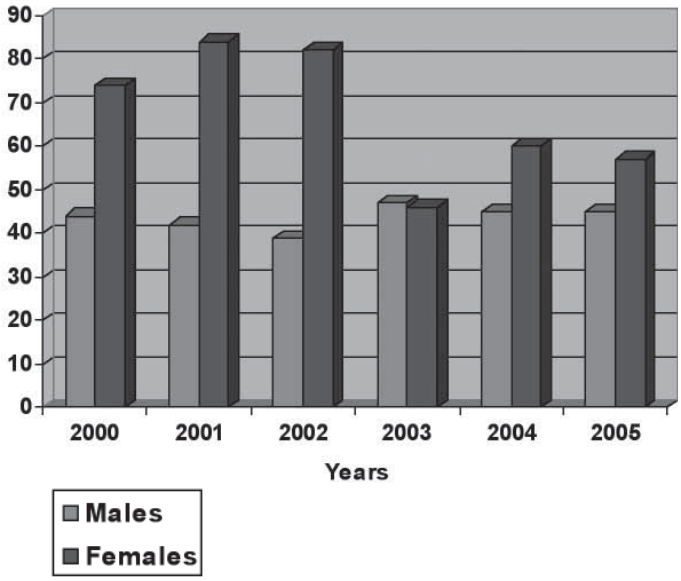
Police records on attempted suicide for Fiji for the years 2000 to 2005 (Fig. 2) show that for all years except 2003 the number of suicide attempts exceeded completed suicides. The combination of completed and attempted suicides (average n 211 p.a.) shows an increase over the 1990s. The number of attempts on record is likely to be significantly underestimated, as many never come to the attention of the police, while all completed suicides do[7].

Figure 2. Number of completed and attempted suicides in Fiji 2000-2005



Police records confirm that the characteristic that distinguishes between people who complete suicides and attempt suicide is gender (Fig 3), where males predominate among the completers and females among the attempters. This finding is consistent with the international experience[8].

Figure 3. Attempted Suicide by Gender in Fiji 2000-2005



Two previous studies have been conducted in Fiji on hospital patients admitted for attempted suicide. Ram & Rao[9] reviewed 59 cases of Paraquat poisoning in the Colonial War Memorial (CWM) Hospital in Suva for the period 1976-1981 and found the largest occurrence in the 15-24 age group (54%) and that 47 (80%) were males.

Aghanwa[10] reviewed cases of 39 suicide attempters admitted to CWM Hospital in Suva in the one year period from mid-January 1999 to mid-January 2000. Fifty six percent were in the age group 16-25yrs, 59% were Indo-Fijian, 62% female, 41% were students and the most commonly used methods were drugs and herbicides - Paracetamol and Paraquat being the most commonly used agents.

Method

This study is a review of the patient characteristics of the 132 people referred to FSEG for counseling after attempted suicide and an associated hospital admission in 2004-2005. The data were summarized and coded by FSEG counselors according to an agreed coding scheme, thereby distancing the researchers from the clinical data.

Objectives

1. To describe social situations or other common precursors that lead to attempted suicide, in particular, to identify the comparative role of social and clinical factors.
2. To identify whether demographic characteristics of gender, religion, ethnicity, educational level, marital status, type of marriage, number of children, and age group were associated with the primary reason for the attempt or with the counselor's assessment of risk of suicide as low, moderate or high made at the first counseling interview.

Variables

Most of the variables are on nominal scales: gender (male, female), religion (Hindu, Christian, Muslim, Other), Ethnicity (Fijian, Indian, Other), educational level (primary, low-secondary, high-secondary, tertiary), marital status (single, married, de-facto, divorced, separated), type of marriage (arranged, love), reason for the attempt (crime victim, depression, domestic violence, economic, emotional abuse, family problem, marital problem, medical related, mental illness (a prior condition), other non-trauma, other trauma, relationship problem and violent abuse) and counselor's assessment of imminent suicide risk (low, moderate, high) at the initial counseling interview. Two variables are on ratio scales: number of children and age.

An additional variable (Primary Stress) was created from the data by collapsing all of the reasons for the attempt into categories of social, clinical and other.

Analysis Procedure

Frequency distributions were created for all variables. The Chi-Square Test for Independence/Homogeneity was used to identify statistically significant associations between the demographic variables and the variables Primary Stress, and Risk Assessment.

Study Limitations

The data only includes cases of attempted suicide, hence the findings are only descriptive of the study group. Further comparison with a group of matched and similarly stressed people who had not attempted suicide will be necessary to determine whether the suicide attempters group possess any particular demographic or other characteristics to distinguish them from other stressed people.

Findings

The findings are presented in 3 parts: a summary of the frequency distributions of all variables, findings of statistically significant associations of the demographic variables with Primary Stress and Assessment of Risk, and a list of potential associations that were not established but are of interest.

Frequency Distributions

The frequency distributions show high numbers of the characteristics female, Hindu, Indian, arranged marriage, childlessness and age under 32 years; experiencing predominantly social stressors that, for most, had resolved to an assessment of low risk on initial interview. The youth of the study group is notable, with almost one third aged 20 or less and the bulk of the remainder aged less 31 or less.

Table 1. Selected findings percentage distributions.

Variable	Finding
Gender	87 (66%) female, 45 (34%) male
Religion	Hindu 78 (60%), Christian 29 (22%), Muslim 23 (17%), Other 1 (1%)
Ethnicity	Indian 119 (90%), Fijian 9 (7%) and 'Others' 4 (3%)
Education Level	Primary 22%, Junior High 35%, Senior High 34%, Tertiary 10%
Marital Status	Single 59 (45%), Married 60 (46%), Other 11 (9%)
Type of Marriage	Arranged 30 (68%), Love 14 (32%) (Total 44 married)
Number of Children	66% had no offspring
Age	Mean age males 27, females 27
	Mean age Indo-Fijian 27
	Mean age Fijian 24
Age Group	42 (32%) aged 10-20, 60 (46%) aged 21-31, 17 (13%) aged 32-42, 8 (6%) aged 43-53, 3 (2%)aged 54-64, 2 (2%) aged 65-75
Reason for attempt	Crime victim 1 (1%), Depression 18 (13.7%), Domestic Violence 1 (1%) Economic hardship 2 (2%), Emotional Abuse 8 (6%), Family problems 25 (19%), Marital problem 19%, Medical related 1 (1%), Mental illness 3 (2%), Other 10 (8%), Trauma 3 (2%), Relationship problems 33 (25%), Violent abuse 2 (2%).
Primary Stress	Social 96 (73%), Clinical 25 (19%), other 10 (8%)
Assessment of Risk	Low risk 71%, Moderate 19%, and High 10%

Note. 'Other' includes ill-defined or poorly recorded events.

Tests of Independence/Homogeneity

The distribution of the full listing of reasons for the attempted at suicide did not identify any statistically significant associations with the demographic variables. However, the collapsed variable 'Primary Stress' showed a statistically significant association with religion, as in categories of 'primary reason', the 'social' factor (compared to 'clinical' and 'other' factors) had the highest percentage distribution among all the religious groups (Table 2) indicating the universality of social stress.

Table 2. Primary Stress and Religion

Religion	Clinical	Other	Social	TOTAL
Christian	4	7	18	29
Row %	13.8	24.1	62.1	100.0
Hindu	16	3	59	78
Row %	20.5	3.8	75.6	100.0
Muslim	5	0	18	23
Row %	21.7	0.0	78.3	100.0
Others	0	0	1	1
Row %	0.0	0.0	100.0	100.0
TOTAL	25	10	96	131
Row %	19.1	7.6	73.3	100.0

Chi Square = 15.1627 df = 6, p=0.0190
Note: 1 case religion not recorded

A significant association was found between Social Stress and all categories of ethnicity and with proportionately more Fijian's among the 'other reasons' group, compared to other ethnic groups although the numbers are too small to validly confirm any association. Again it can be seen that the 'social' category of the 'Primary Stress' has the highest percentage distribution among all the ethnicities.

Table 3. Primary Stress and Ethnicity

Ethnicity	Clinical	Other	Social	TOTAL
Fijian	2	3	4	9
Row %	22.2	33.3	44.4	100.0
Indo Fijian	22	7	89	118
Row %	18.6	5.9	75.4	100.0
Others	1	0	3	4
Row %	25.0	0.0	75.0	100.0
TOTAL	25	10	96	131
Row %	19.1	7.6	73.3	100.0

Chi square = 9.7684 df = 4 p=0.0445
Note: 1 case ethnicity not recorded

No significant associations were found with the Primary Stress for the attempt among variables of gender, age-group, education level, marital status and type of marriage and number of children. No significant associations were found with the Assessment of Risk among variables of gender, educational level, age group, religion, ethnicity, marital status and the number of children.

Discussion

The study group was not randomly selected nor was a comparison group surveyed; hence the findings are informative but not definitive. The sample of referred patients incorporates a range of potential selection biases arising from the referral process itself, possible ethnic or religious differences in suicidal behaviour and potential, ethnic differences in the social response to a suicide attempt, family demands and hospital procedures. The variable contribution of these factors to the outcome of a high proportion of Indian females in the study group has not been assessed.

Given the early development of counseling services in Fiji it is difficult to find a control group of persons undergoing similar levels of stress who don't resort to attempting suicide. Church groups have their own selection biases, while school counseling services may provide some opportunity for case matching, but would require the application of rigorous ethical standards. Case matching across various informal counseling scenarios may be the only option.

The important finding is the overwhelming contribution of social stress to attempted suicide in Western Viti Levu, demonstrated by its high distributions among all ethnic, religious, gender and age groups. That both Christian and Muslims combined account for 40% of the study groups is of interest given that both religions prohibit suicide.

Despite the sample selection biases in this study, this finding cautions against the fallacy of attributing too much of the phenomenon to Indo-Fijians of Hindu faith.

That almost one third of the study group was aged 20 or less and a further 46% were under age 32 may be due to various procedural selection biases, but it does raise concern about the capacity to respond to social stress among young people, given that many others never come to the attention of services. This finding alone warrants further research and the development of services to meet the needs of stressed young people.

Despite the limitations of this study the findings reveal issues of significant concern that will be pursued further as the case list expands and as the possibility of identifying a control group is explored.

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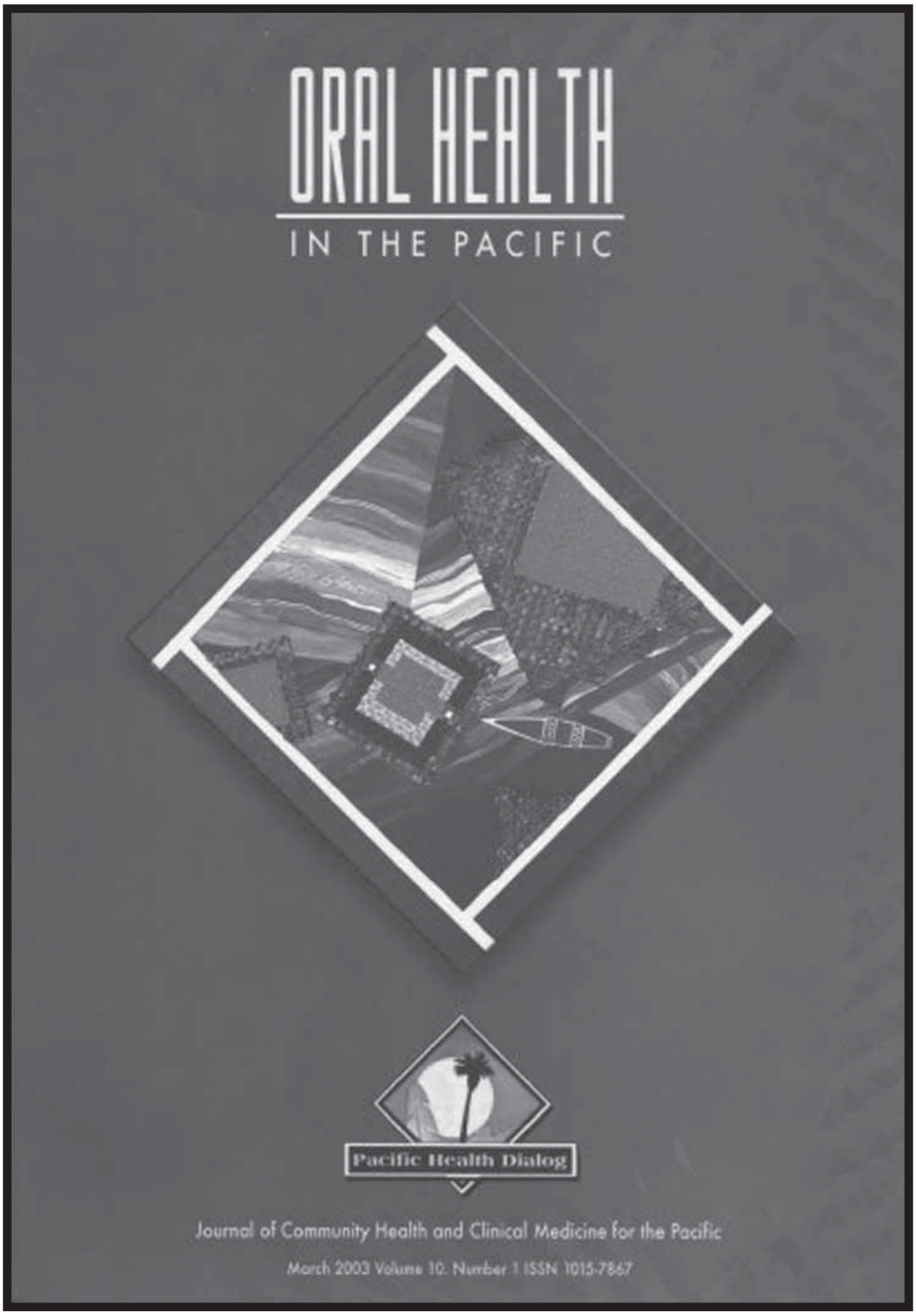
"The greatest mistake in the treatment of diseases is that there are physicians for the body and physicians for the soul, although the two cannot be separated."

- Plato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Masculinity, Mental Health and Violence in Papua New Guinea, Vanuatu, Fiji and Kiribati.

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Abstract:
This paper presents the findings of a four country study conducted by the Foundation for the Peoples of the South Pacific – International through its affiliates in Fiji Vanuatu, Papua New Guinea and Kiribati to demonstrate the linkage between young men, mental health and violence in the Pacific. The findings common among the four studies arise from the socio-cultural and economic transitions occurring across the Pacific Region, where recent years have shown that the Pacific lifestyle has become increasingly stressful and violent. Limited opportunity to participate in the modern lifestyle and its economy has led to personal mental stress, social exclusion, unemployment and the growth of a subgroup of disaffected young people, who resort to a range of means to acquire their daily needs and, among whom, the norms that govern the use of violence differ from those of the general community.

Introduction

This paper presents the findings of a four country study conducted by the Foundation for the Peoples of the South Pacific – International through its affiliates in Fiji Vanuatu, Papua New Guinea (PNG) and Kiribati. Funded by New Zealand Agency for International Development (NZAID), the Masculinity, Mental Health and Violence Project (MMHV) is aims to reduce the growing trend of young Pacific people using violence to meet their needs and to deal with their mental stress. A four-country situation analysis carried out in 2004 contributed to the project objective of gathering 'robust data to demonstrate the linkage between young men, mental health and violence in the Pacific, and to plan and implement successful interventions'. The MMHV project is working at community, national and regional levels to raise awareness and develop strategies on these issues among parents, teachers, policy makers, traditional leaders and young people. It is anticipated that Project activities will raise awareness and help develop supportive coalitions and services for young people.

But it is important to note that mental illness is not necessarily associated with violence or criminality.

Definitions

The linkage of youth, mental health and violence carries a significant potential for misinterpretation and requires some qualification.

Mental Health is the balance between all aspects of life - social, physical, spiritual and emotional. It is an integral part of our overall health and more than the absence of mental illness. It includes how we feel about ourselves and others and how we meet the demands of life. Mental health is being able to think and behave normally within acceptable patterns of community behaviour. Mental illness therefore occurs when an individual is unable to behave normally within the accepted patterns and cultural norms of their society.

'Youth' is defined both chronologically and socially in the Pacific. In common, the four studies define youth as between the ages of 15-30 years, and associate it with single marital status. Mental illness is associated with youth in that most major illnesses become evident in the late teens and early twenties. But it is important to note that mental illness is not necessarily associated with violence or criminality. It is widely accepted among mental health professionals that the mentally ill, as a population subgroup, are actually less violent than the general community.

Similarly, the distinction between mental illnesses and bad behaviour is important to understand. In essence, the legal defence of mental illness hinges on the issue of incompetence to understand situations, actions and their consequences. This is easily determined in those with psychotic disorders, but is more difficult to determine among those with functional disorders, such as the sociopathic personality disorder, where exploitive, guiltless and lawless individuals create their own rules. Although these people are 'disordered' they are more likely to be identified as criminals than as mentally ill.

Mental illnesses can be hereditary (schizophrenia), stress related (the anxiety disorders), drug induced (some psychoses), reactive to life events (depression), disturbances of mood (manic-depressive psychosis, endogenous depression) or biochemical (organic syndromes). Some mental illnesses, such as schizophrenia, have genetic predisposing factors, while others are considered as functional or developmental maladaptations to the social environmental.

Then there are those who are not mentally ill at all, but whose violence is motivated by greed, lust, envy, anger, jealousy and who rightly belong in the criminal justice system. Such people may appear to others to be 'mad' but they have no underlying mental illness.

Summary of Relevant Literature

Reviewing the international literature on community mental health[1], cites 'a close association between the mental health and the general productivity of a community'[2]; 'a close link between unemployment, poverty and diminished mental health'[3] and a similar link 'between modernisation, rapid socio-cultural change and diminished mental health'[4]. Poor mental health is now widely regarded as an important non-communicable disease[5] and violence is now regarded as an important public health issue[6].

Methods

The four country studies reviewed here were all conducted at the start of the project and have used slightly different methodologies. The PNG study conducted a literature review, stakeholder interviews and a Knowledge, Attitude, and Practice (KAP) study among young men in the National Capital and in the Port Moresby prison system. The Vanuatu study conducted a review of available statistics, held focus group discussions and key informant interviews, and examined selected case studies. The Fiji study conducted a literature review, held focus group discussions and key informant interviews and interviewed young violent offenders in the Suva prison system. The Kiribati study conducted stakeholder interviews, and a randomised KAP survey in the general community on issues of mental health.

Findings in Common

The common issues among the four studies point towards a regional phenomenon, suggesting they will require regional solutions, while individual nations will need to deal with the many internal problems resulting from social change. The most common feature of all of these studies is the lack of opportunity for young people to participate in modern society.

Two central issues, education and employment, are at the core of the transitions that Pacific nations are making, from communal effort and shared resources to individual effort and capital accumulation. The need for education to access work and capital are central to the modern way.

Yet education alone is not enough, as lack of opportunity now means that even high school graduates are unable to find work. Meanwhile, continuing high population growth rates and large proportions of the population under 15 years of age (40% in PNG and 37% in Kiribati) are placing significant pressure on governments to find solutions to these problems.

The list of common findings reveals:

1. Rapid population growth in urban centres and high-density living in low standard squatter settlements.
2. Political problems and poor national governance have limited new opportunities for young people.
3. Slow economic growth and poor economic diversity limit employment prospects for young people. Unemployed and non-productive young people are accumulating in urban centres, but with limited opportunity to participate in the cash economy.
4. High population growth rates are projected to continue and to place continued pressure on educational and employment opportunities.
5. Both 'urban pull' and 'rural push' factors are operating. Population increase in rural areas is creating pressure on limited arable land, which 'pushes' people out of rural production. Meanwhile, common perceptions of a better and more simulating life 'pulls' young people to urban centres.

Two central issues, education and employment, are at the core of the transitions that Pacific nations are making, from communal effort and shared resources to individual effort and capital accumulation.

6. Failure of education systems to address varied vocational needs and to interface in forward planning with primary and secondary industry.
7. Lifestyle changes and the need for individual capital accumulation suggest to young people that 'everyone is out for themselves'.
8. Crimes of opportunity occur when immediate want or need overwhelms social considerations.
9. Alcohol is commonly associated with and contributes to the impulsivity and violence of opportunistic crimes.
10. Marijuana use is common. Young men may use violence to acquire the money to buy it but, once affected, are less inclined to violence than when drunk.
11. Crimes of passion are directed to family members, neighbours or close associates, suggestive of high levels of stress and disorders of impulse control.
12. Violent role-modelling by parents, siblings or teachers appears to be common.
13. Neglect or rejection by parents leads to negative attention seeking behaviour and/or domicile among extended family, commonly grandparents.
14. Negative emotions are culturally suppressed until some trigger allows their release, often in the form of anger.
15. Peer pressures are influencing young men to use physical intimidation as a means of asserting themselves.
16. Ex-inmates are forming gangs comprised of people with similar life experience (crime, prison and social rejection).
17. The need for professional counselling services is commonly identified yet it is not a feature of public sector workforce planning.
18. Community based mental health follow-up or rehabilitation services are virtually non-existent, or are seriously limited in scope and professional expertise.

Extracts from country studies.

Extracts from the four country studies illustrate the common issues.

Papua New Guinea: "Young people have trouble obtaining capital, and when they do it is either shared with relatives to purchase the basics of daily living, or used to consolidate other social bonds. Either way, it does not accumulate. Youths have been exposed to social dislocation, economic poverty, changing cultural roles, systematic drop-outs from educational institutions, alcohol and drug abuse, and violence. When young men (and women) are mentally unhealthy, productivity declines and overall socio-economic development stagnates". "Though education reforms have increased chances of children attending educational institutions, employment opportunities have remained unchanged. Jobs are very limited. Many young people turn to illegal activities like drugs, prostitution, armed robbery and street vending to finance their education and livelihoods. Gambling and misuse of funds, land disputes, sexual offences, adultery, rape, gossip, boasting and backbiting are contributing to social breakdown. Alcohol and other beverages, especially cartons of beer, have become an element of male display and prestige in traditional exchanges".

Vanuatu: "Rapid urbanisation and high birth rates have led to a depletion of government resources for education, health care and development of productive occupations. Urbanisation has led to change which is reflected by increased domestic violence, family breakdown, child abuse, substance abuse (alcohol and kava in particular), depression, suicide and crime. Young people often adapt to a more modern lifestyle rather than a traditional one which usually means they undergo changes in culture and in their gender role.

Young people often adapt to a more modern lifestyle rather than a traditional one which usually means they undergo changes in culture and in their gender role.

Many young people are drifting away from many of their cultural practices and beliefs especially in the urban areas because the urban areas offer new technologies and influences such as night clubs, alcohol, videos and television. With such large changes to their lifestyle there is a need for cash and employment. These changes are at all levels - the family, community, cultural and national level". "Many of ni-Vanuatu urban youth are trying to cope with having little power and dominance stemming from living with poverty, unemployment, lack of adequate finances for personal use or to help family members, uncertainty about their future, land inheritance disputes, black magic, not being heard and relationship problems. Many become frustrated and try to become powerful by being violent and aggressive while some become severely depressed. Many break into homes, drink alcohol or kava and "kilim taem" negatively".

Fiji: "Issues have arisen related to: obtaining essential needs, poor parenting, limited personal development, stresses of cultural and socio-economic transition, rural push and urban pull factors, appropriate education, employment and small business opportunities, tensions surrounding human rights and responsibilities, the lack of general youth counselling services, the lack of rehabilitation programs in the prison system and the many pressures related to living in crowded accommodation and squatter settlements".

Kiribati: "The increased number of people living in urban areas of Betio and South Tarawa is now a real problem that has to be addressed at the community level as well as the government level. The number of people living in these two urban areas is now almost reaching half the total population of the entire nation – 88,000 in the last census in year 2000. This is a very big number indeed and has brought with it social problems never seen nor experienced in the past and for which government is now challenged to find solutions". "Due to the increasing number of people in the urban areas and the limited employment and income generating activities, unemployment is skyrocketing and social problems never imagined before have now come to surface. The change from a subsistence way of life to one of cash dependence also contributes to the increasing social problems which have now become an integral part of our everyday lives. The pressures associated with life which depends on cash are now on the rise with alcohol abuse, mental problems, school drop-outs, thefts, teenage prostitution, break-ins, arson and suicides are the more common ones. Fighting amongst young men under the influence of alcohol is a common occurrence throughout South Tarawa and especially in Betio where the majority of nightclubs are. Violence is also known to result in land disputes, which in turn affect family dynamics and movements". The Kiribati study also identifies a lack of family planning as a contributing factor leading to population increase, land pressure, early pregnancy and financial stress.

Recommendations

The recommendations presented in Table 1 reflect the slightly different approaches taken by the four studies but, overall, indicate an internally consistent set that could be considered across the Pacific Region. The recommendations are presented at four levels – family, community, services (government and non-government) and the broader national context.

The most consistent feature of the recommendations is the frequent suggestion for extending counselling services to the general community and in the community's institutions. But also of note is the need for community leaders to learn and disseminate information about the contribution of childhood development to adult outcomes, and to participate in active preventative strategies at the community level.

Also of interest is the suggested increased involvement of local government. While many local governments have some responsibility for youth issues, they may not be adequately prepared or resourced to contribute to the prevention of mental stress related problems. Given the proximity of local government to family and traditional community structures, the strategy to strengthen local government capacity in this area is compelling. Identified 'helpers' in the community

include parents, school teachers, community leaders, chiefs, teachers, police, prison wardens, local councillors, pastors, health workers and vocational trainers.

Service and national level issues require the involvement of all sectors of government but particularly, health, education, social welfare, trade and industry, non government organisations, churches, the private sector and politicians

The studies include general recommendations for youth development but also target specific groups of people seen to be 'at risk'. These include discharged psychiatric patients and released prisoners, early school leavers, unemployed young men, primary and high school children, squatters and those who come to the attention of services as being 'under stress', substance abusers or those unable to manage their anger.

Table 1. Main Recommendations: Four Country Studies on Masculinity, Mental Health and Violence

	PNG	Vanuatu	Fiji	Kiribati
Family Level		Parent education on problems caused by rejection, unfair treatment and physical punishment.	Family and community-based strategies to avoid unnecessary detention of young people.	
		Educate on symptoms of depression and suicide and how to support youth at risk.	Training in parenting skills, anger and stress management and in conflict resolution.	
Community Level	Monitor former inmates with assistance of NGOs and church groups.	Support for youth not in school.	Integrate community development at village level to reduce rural-push factors.	Focus awareness on alcohol's relationship to violence.
	Vocational training and income generating schemes for unemployed youth funded from provincial revenues.	Drop-in Centres for youth with problems.	Strengthen local councils' role in projects to help young people learn skills in villages and rural townships.	Define helper roles and diffuse information within communities.
		Train pastors, chiefs, police, wardens, teachers, etc to help with awareness issues.	Inform parents and teachers of alternative ways to discipline children without resort to physical violence.	
		Educate community leaders on awareness of violence, depression and suicide.	Lobby private sector for short-term employment and work experience opportunities for young people.	
Services Level	Community rehabilitation for psychiatric patients.	Incorporate personal and life skills in primary school curriculum.	Address health and social needs of children and young people in squatter settlements.	Work with police and social welfare in cases of violence.
	Extend mental health and ex-prisoner follow up services.	Trained school counsellors in provinces.	Extend mental health outreach programs to squatter settlements.	
	Volunteer teachers trained to provide counselling to students in primary and high school levels.	Trained counsellors, social workers, psychologists, psychiatric nurses and psychiatrists in health, police and prisons.	Agreed government policy on the provision of jobs for young people.	

(cont. on next page)

	PNG	Vanuatu	Fiji	Kiribati
	Provide counselling services for prisoners and ex-prisoners.	Youth Counselling Centre staffed by qualified counsellors, social worker and psychologist.	Develop rehabilitation services and provide counselling within prisons, and establish a visitors program for inmates with no family.	
		Campaigns on coping with conflict, anger, violence and masculinity.	Adapt school-based education programs to the varied needs of students.	
		Psychiatric units in hospital with trained psychiatric nurses and medical staff.	Improve quality of health services to squatter settlements and people experiencing extreme mental distress.	
		Build coalitions of NGOs, government multilateral agencies to further support 'at-risk' youth.	IEC information on international conventions and government policies.	IEC materials on mental health, mental sickness and disability.
			Revise Public Health Act for prisons to be inspected annually by Central Board of Health.	
			Enforce the Family Law Act 2003.	
National Context	Support rural agricultural development.		Identify traditions within cultures that are aligned with human rights.	
			Support social pluralism, constructive interaction and peaceful co-existence among different groups.	
			Increase national investment in primary and secondary industries.	
			Conduct research on living in a squatter settlement and mental stress.	

Discussion

The four country studies summarised here have identified the social determinants of violence in each country and, indirectly, in the Region. Although each study used a slightly different approach, the common features identified suggest a need for the nations of the Pacific Region to determine their place within the global community and market, while also addressing the many internal issues associated with rapid social change.

The contribution of clinical mental illnesses to the amounts and levels of violence in Pacific communities is not determined in these studies, but it is thought to be small. It is reasonable to assume that the prevalence of clinical mental illnesses is essentially unchanged from past decades; and that its contribution to violence is also unchanged. The literature reviewed and the Fiji study of prison inmates indicates that the effects of alcohol on violence is much larger that the effects of mental illness *per se*.

Although the violence associated with young, psychotic males seen elsewhere in the world is also seen among Pacific communities, it is not seen at a disproportionate rate. The only significant environmental change in the past decade is the increase in marijuana use, whose contribution to precipitating mental illness is still hotly debated. It would be a mistake to attribute to clinical mental illness too large a part of the amount and level of violence observed in the Pacific in recent decades.

The mental factor that emerges from these studies is mental stress rather than mental illness. While there is no doubt that stress contributes to mental and physical illnesses, most people cope with the stresses of life without resorting to

violence. Yet many studies have shown that aggression is a fact of human nature and is triggered by unmet basic needs. The needs and stresses associated with the modern emerging urban Pacific lifestyle are quite substantial, and occur in a context of the breakdown of traditional support structures. Many young men, trying to establish themselves in the cash economy are disconnected from traditional arrangements of reciprocity and live in poverty on the urban fringes. Needs that would previously have been met in traditional ways are now the individual's concern. Young men make new, non-clan alliances that are not governed by traditional norms.

Although appealing to many, it is naïve to suggest a social reversion to past arrangements of clan-based communal support and shared resources, as the secular trends appear to be working in the other direction, towards individualism, nuclear families and, for many, migration. Nevertheless, clan allegiance is a fundamental and valid Pacific social support system that should be invigorated and may ultimately be reverted to if Pacific economies fail. But if economies continue to grow, the tension between clan values and capitalism will continue to divide Pacific communities for some decades to come. It will be important to decentralise development to rural areas to provide land-based subsistence and chances to develop skills among the young people who remain, while others will move on to cash-based employment in urban settings. Similarly, it may be simplistic to think that growth in secondary industry will solve all issues of unemployment and violence in the Pacific, as the reality of competition with China suggest that secondary industry in the Pacific Region will continue to struggle on a small scale.

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Tertiary service industries, such as tourism, offer potential for growth but remain dependent on external economic conditions and offer employment only to those in nearby landowning villages, or with specialist skills. Yet despite the enormity of the task of economic positioning within the global community, these studies suggest that many local arrangements can help to mitigate some of the mounting pressures. The provision of counselling services for the general public and within education, health and penal institutions will contribute to managing the problem, if not reducing its incidence.

But national attention paid and services directed towards improving parenting and child support does offer some hope of reducing the incidence of both mental illness and violence. Similarly, new locally based arrangements for dealing with misdemeanours, such as village courts and community based supervision, will avert many young men from associating with criminals and going on to develop criminal 'careers'.

Although clinical mental illness is not contributing much to this scenario, the widespread misunderstanding of the nature and causes of mental illness in Pacific communities seriously limits the ability to respond to it. Segregation from the rest of the community in long stay facilities (either hospitals or prisons) helps neither the individual nor society (see Roberts this volume).

While individuals suffer the isolation, societies fail to develop an understanding of, or capacity to respond to, people with mental illness or mental stress. Cultural explanations for mental illness in the Pacific are largely inconsistent with modern explanations. They tend to demonise the phenomenon (black magic and/or demonic possession) or attribute some moral failing to the sufferer (poor peer group relationships, religious failing or drug use).

In each of the four studies, teams struggled with the distinctions between stress and mental illness, with the definitions of mental illness and with its association with violence. This suggests that new community-based responses to mental illness will need to commence with clarifying meanings and developing new cultural explanations that include the principles of developmental psychology and an understanding of the organic and treatable nature of many mental illnesses.

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"I find that the harder I work, the more luck I seem to have."
- Thomas Jefferson (1743-1826)


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A Pilot Food Store Intervention in the Republic of the Marshall Islands[1]

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ABSTRACT

To improve diet and reduce risk for obesity and chronic disease, we developed, implemented and evaluated a pilot intervention trial with 23 large and small food stores in the Republic of the Marshall Islands (12 intervention, 11 control). The intervention included both mass media (radio announcements, newspaper ads, video) and in-store (cooking demonstrations, taste tests, shelf labeling) components. Consumer exposure to the mass media components was high (65% had heard half or more of the radio announcements, 74% had seen at least one of the newspaper ads). Consumer exposure to the in-store components of the intervention was moderate (61% attended at least one cooking demonstrations, 59% received at least one recipe card). After adjustment for age, sex and education level, increased exposure to the intervention was associated with higher diabetes knowledge ($p<0.05$) and label reading knowledge ($p<0.05$), but not with increased self-efficacy for performing promoted healthy behaviors. The intervention was associated with increased purchasing of certain promoted foods ($p<0.005$), including oatmeal, turkey chili, fish, canned fruit and local vegetables. It was also associated with improvements in healthiness of cooking methods ($p<0.05$). Food store centered interventions have great potential for changing cognitive and behavioral factors relating to food choice and preparation, and may contribute to lessening the burden of diet-related chronic disease worldwide.

Introduction

Obesity is the most common nutrition-related disorder in Western countries, and its prevalence is increasing in both children and adults[1-3]. Obesity is associated with higher rates of diabetes, cardiovascular disease and other chronic conditions[4-9]. Recent studies have shown an increased prevalence of obesity in many Pacific island populations[10], associated with reduced levels of physical activity and dietary change[11-13]. As local economies move away from subsistence production and become more reliant on imported (mostly high fat) foods, obesity-related diseases, such as hypertension, hyperlipidemia and NIDDM, have become major causes of morbidity and mortality in Pacific populations[11;14-17].

Environmental factors linked to obesity include those that increase energy and fat intake, such as overall availability of very high fat foods, advertisements for and low price of high-energy density foods, marketing of larger portions, increased frequency of restaurant meals and the use of more fast-foods and convenience foods[9-10;18-19]. Prevention of obesity is frequently attempted through educational approaches aimed at improving knowledge, skills and attitudes, which are presumed to impact on individual behavior (20). Such approaches have been largely ineffective[21;22].

Environmental approaches attempt to modify the setting in which such choices are made[20;23;24]. Health educators have long viewed supermarkets as a promising environmental-level venue for providing health information and to encourage the purchase of healthful foods. Food store intervention strategies have the potential to reduce the incidence of obesity and related chronic disease by decreasing dietary fat intake (particularly saturated fat), decreasing simple carbohydrate intake, and increasing dietary fiber intake.

The majority of formally evaluated supermarket intervention programs have been conducted in large cities in the United States and Europe[21; 25-36]. They focused on high-income populations, while only a few studies have involved rural populations and low-income groups. We have found no published studies of food store interventions in developing countries. Most studies to date have focused on large grocery stores, with few working with small neighborhood stores or corner stores.

Unfortunately, most supermarket intervention trials to date have shown limited success. Most of the programs have been able to show improvements in knowledge or awareness, but not in terms of actual food purchasing or behavior[21; 25-26; 28; 32; 33-35]. Some have demonstrated increased sales or promoted foods[27; 37]. Only one showed improvements in diet[36].

Only one of the 15 supermarket interventions reviewed had significant formative research to assist with the design and implementation of the intervention[35]. Evaluation methods have been limited. Most of the studies reviewed used either knowledge[7/15] or purchasing[8/15] as the only assessed impacts. A few studies looked at food consumption[4/15] and preparation[2/15]. One study examined mediating variables

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such as self-efficacy[38]. Detailed assessments of food store interventions in terms of their impact on psychosocial factors and behaviors (purchasing, preparation and consumption) are needed to advance the field.

We developed, implemented and evaluated a pilot store-centered intervention, the Marshall Islands Healthy Stores program, based on substantive formative research, [39-41] and using a conceptual framework based on Social Cognitive Theory (SCT). SCT constructs employed included observational learning, reinforcement, self-efficacy and behavioral capability, with particular attention to impacting on the food environment.

This pilot had the following goals:

1. To attain a high level of exposure of consumers to intervention materials and messages.
2. To improve customer's knowledge, self-efficacy for making healthy food choices.
3. To improve customer's purchasing behaviors and cooking patterns.
4. To determine if a food store-centered healthy foods intervention would be acceptable and feasible from the perspective of local store owners and managers.

Study Setting

The Republic of the Marshall Islands is good setting in which to pilot store-centered intervention due to high rates of obesity and chronic disease, heavy reliance on imported foods and a large number and variety of stores. Located 2000 miles southwest of Hawaii, the Marshall Islands contain 33 small islands and atolls in two parallel chains. The 1999 census estimated the population at 50,840, with two-thirds living in two urban centers.

Our findings indicate that obesity is related to shifts to a high fat, high calorie diet and general decreases in physical activity.

In our pilot study (1995-97) of diet, physical activity and body composition in Marshallese households (n=225), we found that 31% of men and 29% of women were overweight (25<BMI<30), while 20% of men and 33% of women were obese (BMI>30). [40] In 1998, we initiated a two-year study of the behavioral, economic and environmental determinants of obesity in Marshallese households (n=160 hhs).

Our findings indicate that obesity is related to shifts to a high fat, high calorie diet and general decreases in physical activity. These problems are most acute in the two urban settings (Majuro atoll and Ebeye Island), where the diets are almost exclusively based on imported foods [39-40].

Store situation in Majuro atoll, Republic of the Marshall Islands. The pilot trial was conducted entirely on Majuro atoll, home to the majority of the population. Majuro atoll is comprised of a series of road-linked islets strung along a coral reef. There are seven large stores on Majuro atoll, and 136 small stores. Large stores have import and wholesale as well as retail components to their businesses. Small stores, which are often owner-operated, purchase their goods from larger import/wholesale stores. Convenience, non-perishability and preference of consumers determine what the store owners stock and sell.

Access to imported fresh vegetables and fruits is limited even in the large stores, where such goods have to be brought in via air-freight. Such vegetables are often damaged before they are placed on the shelves, and their cost is prohibitive for most Marshallese families. Small stores seldom carry imported fresh fruit; canned goods, sugared or fatty snacks, prepared ramen and coffee are the backbone of the small store's inventory.

Prices vary little between small stores due to competition and shared wholesalers. These operations are economically precarious, and must rely on their most commonly sold items (such as corned beef, sugared or fatty snacks, etc) to draw what little profit they can. Such stores tend to offer credit to their customers, a practice that affects their profit schedule.

Materials and Methods

Development of store intervention strategy and materials. A detailed description of the development format of the Marshall Islands Healthy Stores Program has been published[41]. The store intervention was a collaborative effort between the RMI Ministry of Health and Environment and the Johns Hopkins Center for Human Nutrition. Five principles drove the intervention strategy: 1) changing specific behaviors; 2) promoting healthy alternatives to specific 'high risk' (high fat, high sugar, and/or low fiber) foods; 3) teaching how to make unhealthy foods more nutritious and economical; 4) producing effects that have the potential to change food policy in the Marshall Islands; and 5) using themes salient to local people and identified in our formative research[39; 41]. The intervention included small stores as well as large in an effort to reach as wide a target population as possible.

Three main motivational themes underlay all the specific behavioral messages, including: how to avoid diabetes, being healthy for life, and being there for your children and grandchildren. We identified key foods/food categories that are commonly purchased at local stores (in descending frequency of mention): rice, Ramen noodles, canned meats, poultry parts (turkey tails, chicken quarters), canned tuna in oil, candy and cookies. We also included soft drinks, pancakes, and donuts – all commonly purchased in this setting. Our intervention strategy focused on introducing customers to lower fat, lower calorie, higher fiber alternatives to these foods, or alternative manners of preparation that lower the fat.

The intervention trial took place over a 10 week period, from August 1, 2001 to October 15, 2001. Every 2-3 weeks a different food-related theme was highlighted (eg. "mix canned vegetables in your canned meat; it will feed more people, is less expensive and has less fat"). Store owners were encouraged to stock highlighted foods if they did not already do so. Customers were encouraged to sample these foods through in-store taste tests and cooking demonstrations (n=45). Healthy alternative foods were labeled on store shelves in order to increase access by consumers. Local

media was used to announce demonstrations and reinforce study messages. A key educational approach taught label reading (using newspaper ads, flyers and posters) as a means of identifying healthier alternative foods.

Of the 136 small stores on Majuro, twelve stores were randomly selected to be part of the intervention. Due to changes in ownership, store closures and a store fire, three of the intervention stores dropped out by the end of the study. In addition, we worked with three out of six large stores, who expressed interest in participating in the program. The intervention differed slightly from store to store based on store size.

Evaluation of the program. Evaluation of the Marshall Islands Healthy Store program had four components: 1) process evaluation; 2) exposure to intervention components; 3) impact of the intervention on consumer mediating variables (knowledge and self-efficacy) and behavior; 4) impact of the intervention on store owner/manager knowledge, psychosocial variables and behavior. This paper focuses on exposure to the intervention, and on the impact of the program on consumer mediating variables and behavior.

All evaluation instruments were developed and tested prior to data collection. The consumer instruments were validated by use of cognitive interviewing techniques (n=3), where the interviewer went over each of the questions and responses to see how the respondent understood the question. Four Marshallese nationals and a Johns Hopkins graduate assistant were data collectors. All data collectors were trained and standardized on the evaluation instruments.

This paper focuses on exposure to the intervention, and on the impact of the program on consumer mediating variables and behavior.

Customer respondents were a convenience sample of adults shopping at the intervention stores, plus at 11 other comparison stores. Interviewers rotated between stores and approached the first adult customer who entered a store. After an interview was completed, the interviewer would take the next person who approached.

Consumer Exposure: We assessed exposure to the intervention through a detailed questionnaire conducted post-intervention (n=185). For each component of the intervention the respondent was asked if they had seen or heard of it specifically. To cope with the potential bias of respondent's trying to please the interviewer, a test question was embedded in the instrument. Respondents were asked if they had attended the "lowfat donut" cooking demonstration; something that had never occurred. Ten of the 185 respondents replied in the affirmative. We have removed these respondents from analyses on the impact of exposure.

Consumer Impact Questionnaire: This instrument was conducted on two separate samples of respondents at baseline (n=102) and immediately following the intervention (n=185). The questionnaire included the following sections:

Sociodemographic characteristics: age, sex, household size, education level, occupation, and location of the respondent.

Knowledge: knowledge regarding information emphasized in the intervention, including: label reading, causes of diabetes, and so on.

Self-efficacy: the confidence that the respondent felt to perform the healthy behaviors promoted as part of the intervention. The self efficacy questions were in a "how sure are you" format (eg. How sure are you that you know how to use cooking spray?). Respondents were given four possible responses, from "100% Sure" to "Not Sure at All".

Food purchasing: reported frequency of purchasing of approximately 60 key foods (healthy, promoted foods and their high fat/high sugar/low fiber alternatives) over the past month by respondent, and where these foods have been purchased.

Food preparation: first, second and third most common forms of preparation (boiling, roasting, baking, deep frying, frying, cooking spray, etc.) of 9 commonly consumed foods

Data Analysis

Data collected from the questionnaires were entered into Excel files, and then analyzed in SAS® (Cary, NC).

Scale and score development: Additive scales were developed for knowledge (diabetes, label reading), self-efficacy, preparation methods used, and exposure to the intervention.

Diabetes knowledge score: Respondents were asked to state what diabetes is, describe its causes, and how it can be prevented. Each subsection was scored from 0 to 3 based on correctness of response, where a 0 indicates a "don't know"/inaccurate response and a 3 indicates an accurate and specific response. The total diabetes knowledge scale was calculated by adding together the three subscales, and ranges from 0 to 8 with a mean of 3.9. As the scale is not normally distributed, the analyses presented here are based on a converting the scale to a low (0-3) and a high (4-8) value.

Label reading score: Respondents were shown the label of a high fat food and asked to report on the number of servings in the package, grams of fat per serving, grams of fat in the whole package, milligrams of sodium, grams of sugar, whether it is a healthy food, and whether it is a high fat food. Respondents were given a point for each correct response. Scores ranged from 0 to 7, with a mean of 4.4.

Self-efficacy scale: Respondents were given a series of 19 "How sure are you" questions, which were linked to specific behaviors promoted by the program. For example; "How sure are you that you can mix a can of corned beef with a can of beans or mixed vegetables instead of serving two cans of corned beef the next time you eat corned beef?"

Responses were coded as 100% sure (3 points), pretty sure (2 points), just a little sure (1 point) and not sure at all (0 points). The overall scale ranged from 3 to 63 with a mean of 41 and a Cronbach's alpha of 0.95.

Frequency of food purchasing: Frequency of purchasing of each food was divided into high and low levels for the analyses. These cutoffs differ from food to food as some foods were purchased very frequently and others much less frequently.

Cooking method score: Respondents were asked to describe their first and second most common method of preparing 9 commonly consumed foods. From a starting point of 0, methods of cooking that add fat (pan frying, deep frying, stewing) led to the subtraction of 1 point from the score for each food cooked in that manner. Methods of cooking that reduced the amount of fat or added no extra fat (cooking spray, baked, eating raw, grilling, boiling, and steaming) led to the addition of 1 point to the score. Scores ranged from –9 to 10, with a mean of –0.19.

Additive scales were developed to assess exposure to the components of the intervention. Two different exposure scales were calculated.

In-Store Exposure Score: The first scale examines exposure to the in-store components of the intervention (presence and participation in each of the 8 cooking demonstrations, receipt of the 8 recipe cards, having seen shelf labels). One point was given for each component seen or heard. Scores ranged from 0 to 25 with a mean of 9.6.

Mass Media Exposure Score: The second exposure score examines exposure to the mass media components of the intervention (number of the 7 radio shows heard, number of the 8 newspaper ads seen, number of times saw television video(out of three times possible)). Scores ranged from 0 to 18 with a mean of 8.7.

Analyses sought to examine the impact of the intervention on cognitive (knowledge and self-efficacy) and behavioral (purchasing of healthy foods, healthy cooking methods) factors.

Pre-intervention and post-intervention variable scores were compared using the T-tests for normally distributed variables, and chi-square tests for non-normally distributed variables. Changes in purchasing of key foods were examined by food, divided into low and high frequency of purchase of the food. We looked at both frequency of purchasing of healthy promoted foods and of unhealthy foods. As the pre and post intervention sample differed significantly in terms of education, we looked at these differences both overall and stratified by education.

We conducted a series of multiple regressions on the post-intervention sample only, using level of exposure to assess intervention impacts. Logistic regression was used when the dependent variables were not normally distributed, and linear regression was used for normally distributed variables. Dependent variables were the cognitive and behavioral variables described above. Independent variables in the models to predict consumer behavior included: in-store exposure, mass media exposure, and sociodemographic characteristics of the respondent (age, sex and education level). As the two exposure scales were correlated (Spearmans rho=0.6376), we ran separate regressions for each scale.

Human Subjects Protection

The research study was approved by the Johns Hopkins Bloomberg School of Public Health Committee on Human Research and the Marshall Islands Ministry of Health and Environment. Informed consent was obtained in English or Marshallese from each respondent.

Results

Description of the study population. Table 1 presents basic demographic data on the pre-intervention and post-intervention store customer samples. The two samples differ significantly in terms of education level and occupation status, with the pre-intervention sample being significantly more educated.

TABLE 1. Demographic information on the consumer study sample

Demographic Variables	Pre-intervention sample (n=102)	Post-intervention sample (n=185)	Significance
Age, yrs, x	36.1	35.9	NS
Female, %	50	44.9	NS
Household size, x	10.2	9	NS
Education level, %			
<8th grade	3.2	11.1	
8-12th grade	26.6	14	X^2, p=0.008
High School grad	30.9	43.6	
Some college	26.6	22.7	
College grad or more	12.8	8.7	
Occupation Level[a], %			
Not employed	26.3	28	X^2, p=0.033
Low	35.4	47.8	
High	38.4	24.2	

[a] Occupations were ranked according to social status rather than by income

Exposure to components of the intervention program. Exposure to components of the intervention varied, with generally higher levels of exposure to mass media components and lower levels of exposure to in-store components of the intervention. Exposure to the intervention was associated with age and education level of the respondent, but not to their household size or gender. Older respondents were more likely to be exposed to the in-store components of the intervention, while more educated respondents were more likely to be exposed to mass media components of the intervention.

Diabetes knowledge. Tables 2 and 3 present results on the impact of the intervention on cognitive variables. Pre-post results indicated no significant impact of the intervention on diabetes knowledge, either overall, or within education level (Table 2). On the other hand, logistic regression results indicate a significant relationship between exposure to the

intervention and increased diabetes knowledge, adjusted by age, sex and education level (Table 3). A one point increase in exposure from the in-store and mass media exposure scales was associated with a 7.6% and 7.7% increased likelihood of having a higher diabetes knowledge score.

Label-Reading Knowledge/Skill. Pre-post results indicate a significant positive impact of the intervention on label-reading scores, both overall (X^2=13.897, p=0.001), and by education level (Table 2). The effect was weakest in the highest level of education (X^2=3.008, p=0.083), and stronger in those persons who were High school graduates (X^2=6.206, p=0.013) or who had less than a high school education (X^2=5.767, p=0.016). Logistic regression confirmed these results and indicated a significant positive relationship between exposure to the intervention and increased label reading knowledge (Table 3). A one point increase in exposure from the in-store and mass media exposure scales was associated with 11.3% and 14.7% increased likelihood of having a higher label reading score.

Self-efficacy. Pre-post results indicate that respondents had a higher score for self-efficacy prior to the intervention than post, although the difference was not significant (p<0.10), possibly linked to the higher educational status of respondents pre-intervention. The reverse relationship is seen among respondents in the lowest educational group, who significantly improved their scores pre to post intervention. The medium education and high education group all decreased scores pre to post intervention (Table 2). There was no relationship between both exposure score and self-efficacy in regression models.

TABLE 2. Pre-post effects on label reading, diabetes knowledge and self-efficacy

Cognitive Variable	Overall (Not Stratified)		Stratified by Education Level					
	Pre-intervention (n=102)	Post-intervention (n=185)	Low		Medium		High	
			Pre (n=28)	Post (n=43)	Pre (n=29)	Post (n=75)	Pre (n=37)	Post (n=54)
Diabetes Knowledge, % who scored high	67.7	64.3	60.7	51.2	72.4	70.7	73	68.5
Label Reading	34.3[b]	57.3[b]	10.7[a]	16.9[a]	41.4[b]	68.0[b]	43.2[b]	68.5[b]
Knowledge, % who scored high								
Self-Efficacy,	44.0[a]	38.5[a]	34.4[b]	40.2[b]	45.2[b]	33.7[b]	47.9[a]	43.5[a]
Mean score								

[a] – p<0.10

[b] – p<0.05

TABLE 3. Effect of exposure to the intervention on label reading and diabetes knowledge1

Cognitive Variable	In-Store Exposure OR	95% CI	Mass Media Exposure OR	95% CI
Diabetes Related Knowledge	1.076	1.027-1.128	1.077	1.006-1.153
Label Reading Knowledge	1.113	1.059-1.169	1.147	1.066-1.234

[1] Adjusted for age, sex, and education level

Healthy food purchasing. Table 4 presents pre-post results for healthy food purchasing. Purchasing of oatmeal, turkey chili, fish, canned fruit, and local vegetables significantly increased pre to post intervention. Purchasing of low-fat milk, carnation low-fat evaporated milk, diet soda, low-fat cereal, low-fat ramen, cooking spray and canned vegetables, all significantly decreased prior to post intervention. When stratified by education level, significant increases in purchases of healthier foods were most commonly found in the lower education group. Surprisingly, we found decreased purchases of some healthier foods pre to post in the higher education group.

The positive impacts of the intervention on healthy food purchasing are largely confirmed when we look at the effect of exposure on purchasing of healthy foods in the post-intervention sample (Table 5). Higher exposure to the in-store components of the intervention was associated with increased likelihood of purchasing diet soda, 100% juice, pretzels, turkey chili, canned fruit, imported vegetables, and local vegetables – all foods promoted as part of the intervention. Purchase of all other healthy foods showed no significant association with exposure, except imported fruit and low-fat evaporated milk, which show significant decreases in purchase associated with exposure. Most significant associations occurred with greater exposure to the in-store components of the intervention.

TABLE 4. Pre-post effects on purchasing of promoted healthy foods, % purchasing at 1-3 times/month or more[1]

Food	Overall		Low Education		Medium Education		High Education	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Low-fat milk	33.3[d]	17.3[d]	17.9	32.6	31.0[c]	9.3[c]	40.5[c]	14.8[c]
Low-fat evap milk	15.7[b]	7.6[b]	7.1	18.6	10.3	4.0	24.3[d]	3.7[d]
Low-fat Powdered milk	5.9	3.8	0	4.7	6.9	1.3	10.8	5.6
Diet soda	48.0[b]	34.6[b]	28.6	44.2	51.7	36.0	54.1[c]	25.9[c]
100% juice	55.9	55.1	21.4[b]	51.2[b]	65.5	65.3	67.6[a]	50.0[a]
Equal	33.3	29.7	17.9[c]	48.9[c]	37.9	24.0	35.1	24.1
Oatmeal	12.8[d]	28.1[d]	17.9	34.9	6.9[a]	22.7[a]	13.5[b]	33.3[b]
Low-fat cereal	32.4[d]	11.4[d]	17.9	9.3	17.2[b]	4.0[b]	51.4[d]	22.2[d]
Pretzels	9.8	11.4	7.1	9.3	6.9	14.7	13.5	11.1
Canned beans	12.8	15.7	21.4	30.2	6.9	8.0	13.5	9.3
Turkey chili	1.0[d]	13.5[d]	3.6	4.7	0.0[b]	14.7[b]	0.0[c]	18.5[c]
Fish	78.4[d]	92.4[d]	57.1[d]	93.0[d]	82.8	89.3	86.5[a]	96.3[a]
Noodles	39.2	33.0	10.7	23.3	44.8[a]	26.7[a]	54.1	48.2
Lowfat ramen	17.7[d]	6.0[d]	3.4	9.3	24.1[b]	6.7[b]	24.3[d]	1.9[d]
Cooking spray	16.7[b]	7.0[b]	3.6	0	13.8	5.3	27.0	14.8
Imported fruit (1-2x/wk or more)	75.5	71.9	50.0	46.5	86.2	76.0	83.8	88.9
Local fruit	66.7	71.4	46.4[d]	90.7[d]	75.9	69.3	70.3	59.3
Canned fruit	20.6[d]	48.1[d]	17.9	30.2	20.7[d]	54.7[d]	24.3[b]	50.0[b]
Frozen fruit	5.9	9.7	0	2.3	6.9	9.3	8.1	16.7
Imported vegetables	80.4	77.3	64.3	74.4	86.2	70.7	83.8	88.9
Local vegetables	23.5[d]	61.6[d]	25.0[d]	67.4[d]	10.3[d]	64.0[d]	35.1	50.0
Canned vegetables (1-2x/wk or more)	60.8[b]	45.4[b]	28.6	27.9	62.1b	38.7[b]	78.4	68.5
Frozen vegetables	14.7	11.9	7.1	11.6	27.6[b]	10.7[b]	13.5	16.7

[1] Cut-offs set at 1-3 times/month or more unless otherwise indicated

[a] – $p<0.10$ [c] – $p<0.01$

[b] – $p<0.05$ [d] – $p<0.005$

TABLE 5. Effect of exposure to the intervention on purchasing of healthy foods[1,2]

Food	In-store exposure			Mass media exposure		
	OR		CI	OR		CI
Low-Fat Milk	0.993	0.939	1.051	0.942	0.863	1.027
Low-Fat Evap Milk	1.024	0.942	1.113	0.865	0.753	0.993
Low-Fat Powdered Milk	0.982	0.882	1.094	1.000	0.849	1.179
Diet Soda	1.064	1.016	1.115	1.011	0.941	1.087
100% Juice	1.095	1.046	1.147	1.069	0.998	1.144
Equal	1.029	0.982	1.079	0.932	0.865	1.005
Oatmeal	1.039	0.994	1.087	0.977	0.911	1.048

(cont. on next page)

Food	In-store exposure			Mass media exposure		
	OR		CI	OR		CI
Low-Fat Cereal	0.959	0.893	1.030	0.904	0.813	1.006
Pretzels	1.091	1.019	1.168	1.052	0.946	1.169
Beans	1.000	0.939	1.064	0.937	0.851	1.032
Turkey Chili	1.187	1.081	1.302	1.078	0.957	1.215
Fish	0.991	0.918	1.070	0.952	0.842	1.078
Noodles	1.043	0.998	1.090	1.066	0.991	1.146
Low-Fat Ramen	1.083	0.994	1.180	0.991	0.872	1.126
Cooking Spray	0.952	0.866	1.046	1.034	0.895	1.196
Imported Fruit	0.838	0.725	0.968	0.804	0.698	0.926
Local Fruit	1.002	0.955	1.051	0.943	0.871	1.020
Canned Fruit	1.077	1.031	1.124	1.073	1.004	1.146
Frozen Fruit	1.053	0.972	1.140	0.966	0.853	1.094
Imported Vegetables	1.058	1.005	1.114	1.023	0.951	1.101
Local Vegetables		1.046	1.002	1.093	1.024	0.958
Canned Vegetables	0.936	0.827	1.060	0.842	0.705	1.004
Frozen Vegetables	1.044	0.981	1.110	0.978	0.888	1.078

[1]Adjusted for age, sex, education level of customer respondent

2High=cut-off at 1-3 times/month or more, except for imported fruits and canned vegetables where cut-off set for 1-2 times/week

Unhealthy food purchasing. Table 6 presents pre-post results for purchasing of unhealthy foods, which might be expected to decrease in a successful intervention promoting healthy alternatives. The majority of unhealthy foods purchased by respondents significantly decreased in frequency pre to post intervention, including regular milk, regular evaporated milk, regular soda, sugary cereals, potato chips, corned beef, ramen noodles, butter, chocolate, candy, ice cream, barbequed chicken and doughnuts. Stronger effects appear to be observed among the higher educated group. Whole fat powdered milk, popcorn, and fried chicken showed a significant increase in purchase pre to post intervention.

Our exposure data are discordant with the pre-post assessments of purchasing of unhealthy foods (data not shown). Purchasing of most of the unhealthy foods considered was not significantly associated with exposure to in-store or mass media components of the intervention. Decreased purchase of two unhealthy foods only, whole fat powdered milk and shortening, were associated with exposure to the in-store components of the intervention. Exposure to the intervention was associated with several negative results, including increased likelihood of purchase of potato chips, ramen noodles, chocolate, hard candy, ice cream and donuts.

Food preparation. Some positive effects of the intervention on cooking method were found. From pre to post intervention, cooking method score showed a trend towards improvement (from –0.55 to –0.19), but this overall change was not statistically significant. When broken down by education level, lower education subgroups improved pre to post (low education: -1.07 to –0.65; medium education: -1.48 to 0.00; high education: 0.54 to 0.02), with medium education showing statistical significance (t-test=-2.495, p=0.0142). Exposure to in-store components of the intervention was not a significant predictor of a higher cooking score, but exposure to mass media components did positively predict higher cooking scores (p=0.036, Beta=0.170).

Discussion

The Marshall Islands Healthy Store pilot intervention was associated with positive changes in customer knowledge and food purchasing and preparation behaviors. The intervention, while brief, was intensive, and involved a variety of media and approaches that apparently contributed to success.

This food store-centered intervention trial is ground-breaking in several areas.

To our knowledge, this is the first carefully evaluated store-centered intervention program to take place in a developing country setting.

Also, to our knowledge, this is the first food store-centered intervention trial that has worked in both large supermarkets and smaller local stores.

These findings have relevance to the many rural communities and inner city neighborhoods throughout the United States where large supermarkets are scarce or inaccessible, and where consumers rely on small convenience or corner stores. The intervention itself was unique in that it employed a wide variety of approaches which reinforced each other, both within stores (shelf labels, cooking demonstrations, posters) and at the mass media level (radio, newspaper, television).

TABLE 6. Pre-post effects on purchasing of unhealthy foods, %

Food	Overall		Low Education		Medium Education		High Education	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Regular Fresh Milk[1]	68.6[d]	30.8[d]	42.9[b]	18.6[b]	72.4[d]	29.3[d]	81.1[d]	44.4[d]
Regular Evap. Milk[1]	68.6[a]	57.8[a]	46.4	39.5	69.0	61.3	78.4	68.5
Regular Powd. Milk[2]	7.8[b]	17.3	7.1[b]	30.2[b]	10.3	10.7	8.1	16.7
Creamer (Regular)[1]	28.4	28.6	14.3	20.9	27.6	28.0	32.4	35.2
Regular Soda[1]	85.3[b]	74.1[b]	75.0[b]	48.8[b]	86.2	81.3	89.2	85.2
Sugared Cereal[1]	37.3[d]	17.3[d]	21.4[a]	7.0[a]	41.4[b]	21.3[b]	40.5[b]	18.5[b]
Potato Chips[1]	66.7[d]	37.8[d]	39.3[b]	14.0[b]	72.4[b]	50.7[b]	78.4[d]	40.7[d]
Popcorn[2]	24.5[a]	35.7[a]	21.4	14.0	27.6[a]	45.3[a]	27.0	38.9
Regular Chili[2]	3.9	5.4	3.6	7.0	3.5	5.3	5.4	1.9
Corned Beef[3]	53.9[d]	20.0[d]	46.4	30.2	55.2[d]	10.7[d]	51.4[d]	22.2[d]
Ramen (Regular)[1]	79.4[b]	66.0[b]	64.3	51.2	79.3	74.7	86.5[b]	66.7[b]
Shortening[1]	3.9[d]	16.2[d]	3.6[a]	16.3[a]	3.5	2.7	2.7[d]	31.5[d]
Cooking Oil[1]	32.4	27.6	25.0	18.6	27.6	25.3	29.7	35.2
Butter[1]	64.7[d]	35.7[d]	32.1[a]	14.0[a]	65.5[b]	40.0[b]	81.1[d]	51.9[d]
Chocolate Candy[1]	63.7[d]	43.2[d]	32.1[b]	11.6[b]	62.1	62.7	81.1[d]	46.3[d]
Hard Candy[1]	55.9[d]	31.4[d]	21.4[b]	4.7[b]	55.2	49.3	73.0[d]	31.5[d]
Ice Cream[1]	69.6[d]	51.9[d]	53.6[d]	16.3[d]	62.1	66.7	81.1[a]	63.0[a]
Fried Chicken[1]	41.2[d]	62.2[d]	21.4[b]	51.2[b]	34.5[b]	61.3[b]	51.4[a]	70.4[a]
BBQ Chicken[1]	44.1[d]	24.3[d]	21.4	30.2	34.5[d]	9.3[d]	59.5[b]	35.2[b]
Donuts[3]	73.5[d]	49.2[d]	60.7[b]	34.9[b]	75.[a]	57.3[a]	75.7[b]	55.6[b]

[1]Cut-off set at 1-2 times/week or more frequently purchased
[2]Cut-off set at 1-3 times/month or more frequently purchased
[3]Cut-off set at 3-6 times/week or more

[a] – $p<0.10$
[b] – $p<0.05$
[c] – $p<0.01$, [d] – $p<0.005$

Our intervention strategy was based on extensive formative research in the community, and focused on themes that were important to the Marshallese people.

The program showed some positive effects on cognitive variables, with better scores on the diabetes knowledge scale associated with increased exposure to the intervention. Diabetes was mentioned with some frequency in program materials as a motivating factor for behavioral change, however not a great deal of attention was paid to understanding what it was, how it is caused or could be prevented. This explains to some degree the lack of significant results pre to post intervention. Label reading was significantly improved by the intervention, particularly in those persons of higher education levels, perhaps reflecting literacy. These effects reflect the heavy attention paid to label reading in the intervention materials.

The program was associated with increased frequency of purchasing of many of the healthy foods promoted. On the other hand, some of the foods promoted showed a significant decease in purchasing pre to post intervention.

Decreased purchasing in one type of food may have been balanced by increased purchasing of another food. So for example, while canned vegetable purchases decreased pre to post intervention, local vegetable purchases increased. Purchases of healthy and unhealthy milk products decreased across the board. This may be related to our intervention, which emphasized decreased tea and coffee consumption, and use of less added sweeteners and lighteners.

Study results for purchasing of unhealthy foods are less easy to explain. While we did see most of these foods decrease in frequency of purchase pre to post intervention, there appeared to be no or even opposite effects in the analyses associated with exposure to the intervention and food purchases. It should be reiterated that our intervention was aimed at promoting the consumption of new healthy foods as alternatives to unhealthy foods. We specifically avoided negative marketing of unhealthy foods, out of concern with alienating store owners and managers whose primary concern it was to stay in business. We would argue that our study was successful in increasing trial purchases of many healthy foods, but did not impact significantly on purchasing of their less healthy counterparts.

It is also quite possible that overall decreases in food purchasing may reflect secular or seasonal trends. Our later interviews with large store managers lend some credibility to this theory; they observed that sales had overall decreased from August to October. This speaks to the need to conduct controlled intervention food store intervention trials of longer duration so that seasonal effects can be assessed.

We conducted separate analyses of the impact of exposure to in-store components of the intervention, and impact of mass media components of the intervention. In general, exposure to mass media components was higher than exposure to in-store components, but stronger effects were observed of the in-store components than the mass media components. About 20% of the samples were exposed to the mass media intervention only. Many of the materials and messages were reinforcing (e.g. some of the same graphics on the recipe cards appeared in the newspaper ads). We argue for the need for multiple, reinforcing intervention approaches, at both the in-store and mass media levels.

Future assessments of the impact of food-store centered interventions should examine impacts on diet and food consumption at the household level, and make linkages with health outcomes.

There are several limitations of the intervention trial that should be noted. First, the study design suffered due to a lack of a control group of consumers. Unfortunately, there is no other comparable atoll or island in the Marshall Islands that would have permitted an appropriate comparison.

Second, there was potential for seasonal changes (particularly in the availability of local fruits and vegetables) which impact on pre to post changes. It should be noted however, that on Majuro atoll, population density is so high, that during the season of local produce, availability of these foods is limited and these foods do not comprise a major part of the diet.

Third, the intervention itself was lacking in several areas. In the brief period of the intervention we had difficulty in convincing smaller stores to stock many of the foods we were promoting. Future programs of this type will require more time and effort to make these changes which bear an obvious risk for owners of small stores. The majority of interventions conducted to date have been of short duration, with only a few covering periods of a year or more. Interventions occurring over longer periods may contribute to the success of the program[21].

Fourth, several areas in our choice of evaluation methods could have been improved. It appears that our pre and post samples were significantly different in some areas, such as education. It is likely, but was not assessed, that there were economic differences as well, which might have impacted on ability to purchase different foods we were promoting. We dealt with this by stratification of the pre-post sample by education, and by including education level in the logistic regressions.

Future assessments of the impact of food-store centered interventions should examine impacts on diet and food consumption at the household level, and make linkages with health outcomes. A final limitation of this study lies in the lack of assessment of size of store on food purchasing by consumers.

As stated earlier, this issue is confounded in this setting by the fact that consumers use multiple stores for their purchases, often several small and one or more large stores. Recent work has shown that presence of stores and store size can impact on consumption of healthy food alternatives in the United States[42]. Future store-centered intervention trials should carefully examine the relative impact of large and small stores on food purchasing and consumption.

In conclusion, the Marshall Islands Healthy Stores program was successful in impacting on many of the cognitive and behavioral outcomes measured. Future plans for the Marshall Islands Healthy Stores program include expansion to other stores on Majuro atoll, and expansion to other atolls in the country. With modification, we feel the current program is applicable to other countries in Micronesia and the Pacific.

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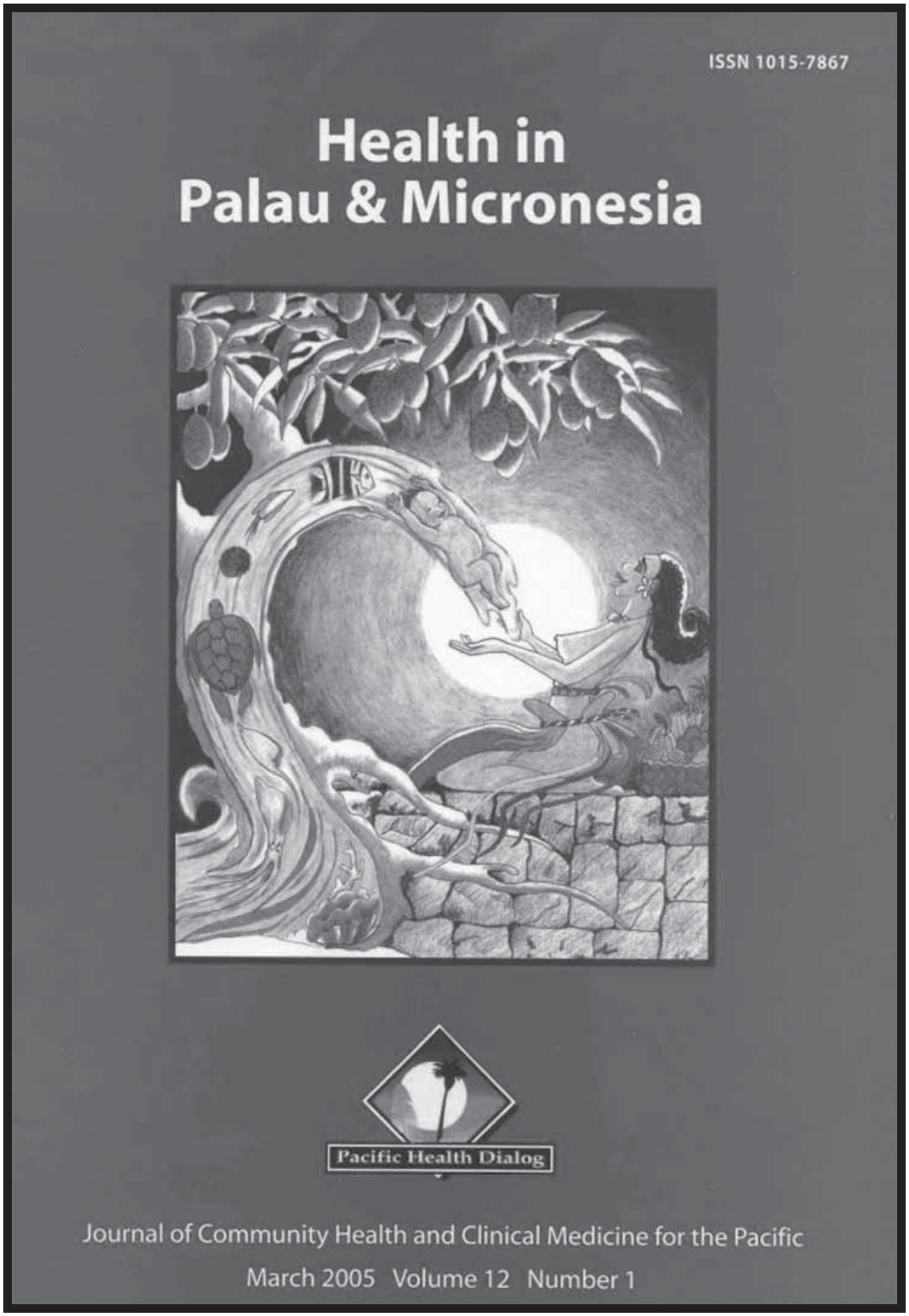
"Not everything that can be counted counts, and not everything that counts can be counted."

- Albert Einstein (1879-1955)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Assessing Overweight and Obesity in American Samoan Adolescents.

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Abstract

OBJECTIVE: A small number of informed Samoans question the relevance of applying standards developed primarily from Caucasian populations when screening Polynesian children for obesity. They attribute higher body mass index values in Polynesian populations, in part, to anatomical factors other than higher body fat percentage.

METHODS: We attempted to allay these suspicions by assessing a sample of 380 American Samoan schoolchildren aged 11 to 18 for overweight and obesity using both the International Obesity Task Force and the Centers for Disease Control age- and sex-specific body mass index cutoffs and recently proposed age- and sex-specific waist circumference cutoffs for children and adolescents. We tested cholesterol and glucose levels for risk factors associated with obesity, and hemoglobin levels for iron deficiency. We also compared body mass index values from our sample with those from a similar sample taken in American Samoa in 1978 and 1982.

RESULTS: Both body mass index cutoffs equally distinguished overweight or obese individuals, constituted by 62% of the males and 70% of the females, from individuals with normal weight. Waist circumference cutoffs assigned percentages of 56% and 61%, respectively. Applying BMI cutoffs to data collected a quarter century ago indicated that 23.0% of males and 43.5% of females were either overweight or obese. We failed to obtain evidence for elevated levels of cholesterol and glucose in overweight and obese individuals among 49 preprandial students. Six males and ten females had subnormal levels of hemoglobin but displayed no physical symptoms suggesting iron deficiency.

CONCLUSION: The prevalence of overweight and obesity among contemporary American Samoan adolescents make them an especially vulnerable faction of the global obesity epidemic.

Introduction

Obesity is a rising epidemic worldwide, but rates are particularly high among urbanized Samoans[1-4]. Adolescent obesity is especially disturbing because it tends to persist into adulthood[5-6], predisposing individuals earlier in life to a host of debilitating non-communicable diseases including cardiovascular disease, diabetes, and several types of cancer. For American Samoa, this will further tax an already overburdened healthcare system.

Between 1975 and 1982 four surveys were conducted on Samoan children, 4 to 20 years old, living in Western Samoa, American Samoa, Hawaii, and California.[3] They found that growth and adiposity were significantly greater in the latter three groups and attributed this to socioeconomic modernization, that is, changes in diet and level of physical activity.

Bindon[7] reported that in 1982 the diet in American Samoa was in transition from one based on locally produced foods and fishing to one based on imported foods. He noted that children were not very active, with television watching being the favorite activity of most. Before the end of the century, imported white rice had replaced plantation crops as the chief source of carbohydrate[8]. In September 2000 the first fast food franchise opened in American Samoa with enthusiastic fanfare. Before the end of 2007 six nationally known fast food restaurants will be catering to a population of over 57,794 (July 2006 est.)[9]. With more meals eaten at fast-food restaurants, fewer families tending multicrop plantations for their main source of food and regular exercise, and a greater reliance on video games and television to occupy children because of both parents working outside the home, it is imperative that the obesity epidemic affecting American Samoa's children be recognized and addressed by the local community. Yet a small number of creditable Samoans question the relevance of applying metrics, developed using predominantly Caucasian reference populations, for classifying Polynesians as overweight or obese. They note the disproportionally large number of Samoans playing for U.S. college and professional football teams and the considerable number of soldiers attached to the local U.S. Army Reserve who are flagged for exceeding the Army's body fat standard[10], though they pass the Army Physical Fitness Test. They are understandably wary of having their children considered obese based on standards developed on a nonrepresentative population by distant experts. Their skepticism is abetted by a lack of consensus as to which anthropometric index and cutoff value best assesses childhood obesity.

We attempted to address these valid criticisms in two ways: First, by assessing overweight and obesity in a sample of 197 males and 183 females aged 11-18 years using two widely-accepted body mass index standards together with recently proposed age- and sex-specific waist circumference cutoffs for children and adolescents. Second, by comparing our body mass index data with data collected in American Samoa in 1978 and 1982 on 130 males and 138 females between the ages of 11-18 to show if there has been a significant increase in the body mass index for all ages and both sexes.

We also screened for risk factors of cardiovascular disease and diabetes by measuring levels of total cholesterol and glucose in blood, and for evidence of iron deficiency by measuring hemoglobin levels.

Materials and Methods

Our study sample comprised 380 children, or about 5.5% of the population who identified themselves as being of pure Samoan or mixed Samoan ethnicity enrolled in grades 7-12 on Tutuila Island, American Samoa, in 2005. Parental consent forms, printed in English and Samoan and approved by the Institutional Review Board of the American Samoa Department of Health, were given to principals at three of six high schools (Leone, Tafuna, and Fagaitua) and three of twenty-six elementary schools (Leone Midkiff, Pago Pago, and Manumalo) for distribution to all students in our selected grades. These schools represented a population of children from mostly low- to medium-income families island-wide. Students who returned signed forms, which averaged over 95%, were then randomly selected for the study.

Between 6 April and 23 August 2005 we visited schools for anthropometric measurements and finger sticks. Students were measured for height, weight, and waist circumference while bare-footed and dressed in lightweight school uniforms. Heights were taken using a Perspective Enterprises Portable Adult/Infant Measuring Unit, weights using a Tanita Model BWB-800S Digital Scale, and waist circumferences using a fiberglass tape. We pricked the tip of either the second or third finger with an auto-retracting, single-use lancet pre-armed with a 1.8 mm needle and wiped away the first drop of blood before collecting subsequent drops for cholesterol, hemoglobin, and blood glucose tests. Total cholesterol levels were measured with a CardioChek Meter using Polymer Technology Systems PANELS test strips, hemoglobin with a HemoCue B-Hemoglobin Photometer, and glucose levels with a Roche Accu-Chek Advantage Meter.

We categorized students as being of normal weight, overweight, or obese according to the terminology and criterion of the age- and sex-specific International Obesity Task Force (IOTF) body mass index (BMI, as kg m^{-2}) cutoffs.[11] We chose the IOTF cutoffs for relating body mass index to obesity primarily because the IOTF cutoffs have the advantage of being constructed from a more ethnically diverse population. For comparison with United States studies, we included BMI category distributions derived from the 2000 Centers for Disease Control and Prevention[12] (CDC) growth charts for children and adolescents. Because the very idea of associating weight-related health risks to BMI is under challenge[13, 14], we evaluated our data using recently proposed waist circumference cutoffs for children and adolescents[15].

Using SigmaStat 3.1, we performed two-way analysis of variance (ANOVA) with sex and IOTF BMI category as factors. We recorded the mean, x, and standard deviation, s, as $x \pm s$ followed by the sample size, n. Data that failed the normal distribution criterion for t-tests were compared using the Mann-Whitney Rank Sum Test with medians, rather than means, reported if significantly different.

Results

Eighty percent of the students reported that both parents were of Samoan ancestry while 20% reported having only one Samoan parent. Based upon IOTF BMI cutoffs, 75 of 197 males had normal weights, 57 were overweight, and 65, or 33%, were obese. Of 183 females, 53 were of normal weight, 64 overweight, and 66, or 36%, were obese (Table 1).

TABLE 1. Comparison of International Obesity Task Force (IOTF) cutoffs to the Centers of Disease Control (CDC) cutoffs for categorizing body mass index.

Age (years)	IOTF (kg m^{-2})			CDC (Percentile)		
Male	**<25**	**25-30**	**< 30**	**85th**	**85th - 95th**	**>95th**
11	9	1	2	8	2	2
12	21	10	7	20	7	11
13	7	8	9	7	7	10
14	12	9	13	12	6	16
15	12	12	8	12	10	10
16	6	8	11	7	7	11
17	7	6	9	7	4	11
18	1	3	6	1	3	6
Subtotals	**75**	**57**	**65**	**74**	**46**	**77**
Female						
11	6	3	4	6	3	4
12	15	8	11	12	10	12
13	5	10	6	5	7	9
14	7	5	7	7	5	7
15	7	16	13	7	14	15
16	6	11	15	7	9	16
17	5	9	7	8	6	7
18	2	2	3	3	1	3
Subtotals	**53**	**64**	**66**	**55**	**55**	**73**
Totals1	**128**	**121**	**131**	**129**	**101**	**150**

The IOTF categorizes body mass index (BMI) values less than 25 as "normal weight," BMI between 25 and 30 as "overweight," and BMI greater than 30 as "obese." The CDC categorizes BMI percentiles less than the 85th as "normal weight," percentiles between the 85th and 95th as "at risk of overweight," and percentiles greater than 95th as "overweight." A BMI > 95th percentile among youth is approximately equivalent to a BMI > 30 among adults.

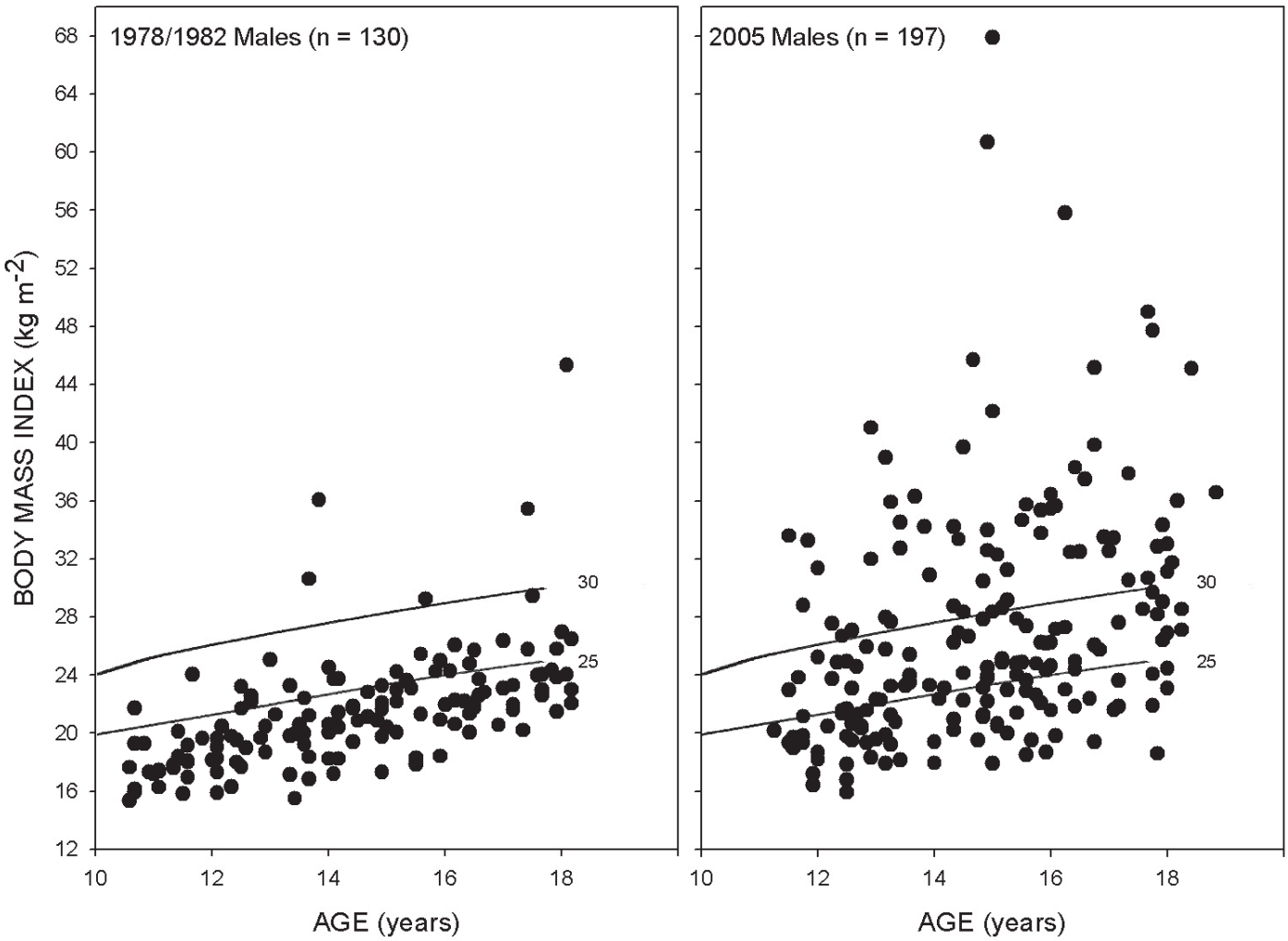
Using CDC BMI cutoffs and terminology, which defines children above the 95th percentile as overweight, about 40% of both sexes were overweight (Table 1). This was far above

the estimated 16% of children and adolescents ages 6-19 years that were overweight in the United States[16] or the highest US ethnic group rate of 23.6% for 12- to 19-year-old non-Hispanic Blacks.[17] It was also higher than the 27.9% obesity rate reported in some Polynesian schools during a 2002 survey of children aged 6-12 years from 13 Pacific countries[18].

Taylor et al[15]. provided age- and sex-specific 80th percentile cutoffs for waist circumference as a screen for high trunk mass in children aged 3-19 years that had a sensitivity of about 88% and a specificity of about 93% when evaluated against dual-energy X-ray absorptiometry. These cutoffs, they reported, closely approximated the 85th percentile of the CDC BMI growth curves for both sexes. Applying these cutoffs to our data, 57% of males and 61% of females had a waist circumference suggestive of high trunk fat mass. These percentages are similar to the 62% of males and the 70% of females who were either overweight or obese according to either BMI standard.

During 1978 and 1982, Bindon and others collected BMI data on 130 males (n_{1978} = 90 and n_{1982} = 40) and 138 females (n = 78 and 60, respectively) in American Samoa aged 11 to 18 years (see Acknowledgements). We pooled data from both years after paired t-tests on average BMI values for each age and sex suggested that the samples were drawn from the same population. Retroactively applying IOTF BMI cutoffs to the 1978/1982 cohort data, the incidence of obesity for males and females was 3.8% and 8.0%, respectively, while the incidence of overweight was 19.2% and 35.5% (Figs. 1 and 2).

Figure 1. Distributions of body mass indexes (BMI) for males from the 1978/1982 cohort (left panel; from Bindon – see



Acknowledgements) and 2005 cohort (right panel) superimposed on International Obesity Task Force cutoffs for overweight and obesity, passing through BMI 25 and 30 kg m-2, respectively, at age 18.

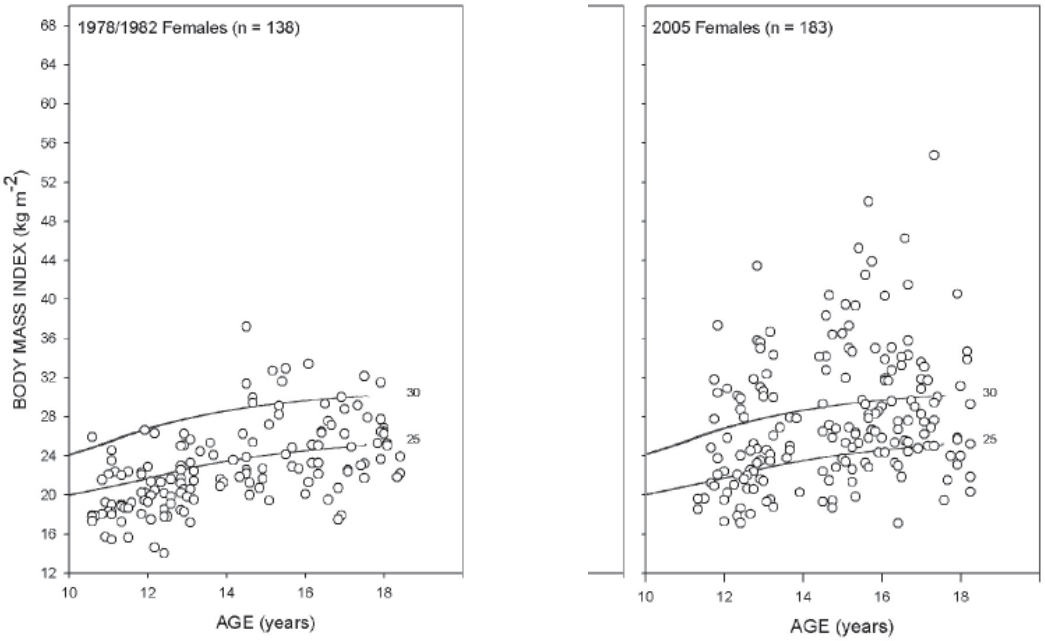


Figure 2. Distributions of body mass indexes (BMI) for females from the 1978/1982 cohort (left panel; from Bindon – see Acknowledgements) and 2005 cohort (right panel) superimposed on International Obesity Task Force cutoffs for overweight and obesity, passing through BMI 25 and 30 kg m-2, respectively, at age 18.

We repeated the paired t-tests to compare the pooled data of the 1978/1982 cohort with that of our 2005 cohort. It gave highly significant differences ($P < 0.001$) between means for both sexes. Average BMI values increased 4.9 kg m^{-2} for males and 3.8 kg m^{-2} for females during the past quarter century (Table 2).

TABLE 2. Comparison of Average Body Mass Indices (kg m-2) of 1978/1982 cohort with 2005 cohort.

Age (years)	1978/1982 cohort[1]		2005 cohort		Difference
	x + s	(n)	x + s	(n)	
Male					
11	18.18 + 1.93	(16)	21.59 + 4.87	(12)	3.41
12	19.38 + 1.98	(20)	22.88 + 5.09	(38)	3.50
13	21.70 + 5.24	(16)	26.04 + 6.46	(24)	4.34
14	20.95 + 2.04	(22)	28.9 + 11.17	(34)	8.01
15	22.32 + 3.03	(16)	25.60 + 4.87	(32)	3.28
16	22.67 + 1.79	(16)	30.28 + 8.78	(25)	7.61
17	24.34 + 3.51	(18)	29.68 + 7.76	(22)	5.34
18	27.97 + 8.71	(6)	32.05 + 6.05	(10)	4.08
Female					
11	20.06 + 2.65	(26)	24.24 + 5.96	(13)	4.18
12	20.53 + 3.01	(28)	25.28 + 6.11	(34)	4.75
13	21.97 + 2.40	(14)	26.07 + 4.98	(21)	4.10
14	24.99 + 4.73	(16)	27.69 + 6.64	(19)	2.70
15	26.88 + 4.47	(11)	30.27 + 7.39	(36)	3.39
16	24.33 + 4.28	(19)	29.85 + 6.16	(32)	5.52
17	26.04 + 3.26	(16)	28.75 + 7.53	(21)	2.71
18	24.72 + 1.91	(8)	28.03 + 5.69	(7)	3.31

[1]From Bindon (see Acknowledgements)

In addition to higher percentages of both males and females in the 2005 cohort categorized as obese, they entered this category at a much younger age and with much higher BMI values when compared with the 1978/1982 cohort (Figs. 1 and 2).

All but 49 students had reported eating breakfast prior to testing. Two-way ANOVAs by sex and IOTF BMI category did not reveal a significant difference in mean cholesterol or glucose levels among students who had fasted. Nor was there a difference (t-tests) in mean cholesterol levels between those who fasted (3.45 $\pm$ 0.70 mmol L^{-1}, n = 23 and 3.35 $\pm$ 0.56 mmol L^{-1}, n = 18 for males and females, respectively) and those who did not (3.37 $\pm$ 0.63 mmol L^{-1}, n = 145 and 3.57 + 0.84 mmol L^{-1}, n = 150). One male had a high cholesterol reading[19] of 5.57 mmol L^{-1} and two others had borderline readings19 of 4.40 and 4.95 mmol L^{-1}. All three were categorized as obese.

Neither did we find a difference in median blood glucose levels between preprandial (5.33 mmol L^{-1}, n = 23) and postprandial (5.39 mmol L^{-1}, n = 160) females. Fasting males, however, had a significantly lower (P = 0.023) median (5.22 mmol L^{-1}, n = 26) than postprandial males (5.56 mmol L^{-1}, n = 171). No male had a glucose level above 8.0 mmol L^{-1}, but one normal weight and one obese postprandial female had levels of 11.1 and 14.2 mmol L^{-1}, respectively, which were above the maximum level of 10.0 mmol L^{-1} for nondiabetics[20].

We did not distinguish between pre- and postprandial students when analyzing the hemoglobin data. But hemoglobin levels were not amenable to ANOVA owing to unequal variances despite attempts to transform the data. Four normal weight and one overweight male had levels below 100 g L^{-1}, as did four normal weight and six overweight females.

Discussion

One objection to using the CDC BMI growth chart cutoffs on children of Samoan ancestry is that they were developed using a nationally representative reference population of children and adolescents from 2 to 20 years of age based on racial/ethnic compositions in the United States between 1963 and 1994[21]. This composition was overwhelmingly non-Hispanic White, with Asian/Pacific Islanders constituting 4% or less. Still, the CDC recommends their growth charts for all racial and ethnic groups, attributing differences among children of certain high-risk populations to a greater sensitivity to, or a lesser ability to avoid, causal factors when present[21]. Nevertheless, the IOTF undertook the task of developing age- and sex-specific growth charts based on a reference population of pooled data from several countries, including the United States[11]. At least one attempt to improve upon the IOTF BMI cutoffs for a single ethnic group has failed.[22]

Both the IOTF BMI and the CDC BMI cutoffs did equally well in identifying students of either sex as having a healthy weight. They differed, however, in that the IOTF BMI cutoffs classified fewer students as obese and more as overweight. In screening for adolescent obesity, minimizing the proportion who would be incorrectly considered obese may be more important than maximizing the proportion who would be correctly identified as obese[23]. For this reason the IOTF BMI cutoffs may be more appropriate for categorizing Samoan youths.

While it may be desirable and practical to eventually tailor an obesity screening tool specifically for Polynesians, the ramifications of unchecked obesity in American Samoan youth make it imperative that the problem be addressed now based on the best available evidence.

A small number of Samoans believe that they and their children track higher on BMI owing to more lean body mass, thicker bones, and denser body builds rather than to adipose tissue. Several studies[24-31] corroborate this claim. For instance, Pawson[24] found that Samoan adults were significantly heavier for a given height than the US norm. This held true even for individuals from Western Samoa where excessive obesity was uncommon[24]. Rush et al.[31] noted that Maori and Pacific Island girls had, on average, 3.7% less body fatness than New Zealand European girls of the same body size. However, the difference in body composition between Polynesians and other racial groups does not belie the higher prevalence of non-communicable diseases in Polynesian adults[25]. When higher BMI thresholds were applied to Maori and Pacific Island peoples, they still remained twice as likely to be obese than Europeans and to have a much higher prevalence of type 2 diabetes[24].

Waist circumference has the advantage of circumventing the arguments used to diminish the significance of high BMI values for Samoan youth. It provides a measure of truncal adiposity free of the undefined influences of bone thickness, denser body build, and lean body mass elsewhere than around the abdomen. Waist circumference, along with hip circumference and waist-to-hip ratio, were found to be better predictors for cardiovascular disease in adults from several major ethnic groups than was BMI[14]. Waist circumference also had a high correlation with cardiovascular risk factors in prepubertal children[32]. Recently proposed age- and sex-specific waist circumference cutoffs[15] for Caucasians 3-19 years old, when applied to our data, showed that the proportion of students having a waist circumference suggestive of high trunk fat approximates the proportion who are either overweight or obese according to either BMI standard.

While the IOTF BMI cutoffs mitigate the perceived bias of the CDC BMI cutoffs in being more pertinent for Caucasians, they further dilute representation by Polynesians by including populations from Brazil, Great Britain, Hong Kong, the Netherlands, and Signapore[11]. And although waist circumference provided independent attestation in support of a prevalence of overweight and obesity in Samoan adolescents, the cutoffs for children and adolescents were based on an exclusively Caucasian sample.

We avoided any confounding effects of race/ethnicity altogether by contrasting average BMI values of contemporary American Samoan youth with values recorded a quarter century ago by Bindon on a comparable sample of children. Results showed a dramatic increase in BMI at all age groups and for both sexes. For males BMI increased an average of 0.20 kg m^{-2} $year^{-1}$, while for females the increase was a more modest, yet striking, 0.15 kg m^{-2} $year^{-1}$. As a consequence the percentage of overweight males increased from 19.2% to 28.9%, while the percentage of obese males increased nearly 9-fold from 3.8% to 33.0%. The percentage of overweight females remained unchanged at 35%, but the percentage of obese females increased from 8.0% to 36.1%. Furthermore, BMI values exceeding the 30-BMI cutoff appeared at an earlier age and at higher values in the 2005 cohort for both sexes.

Only one of 24 preprandial males had an elevated level of cholesterol. While no preprandial student had an elevated level of blood glucose, two of 158 postprandial females had levels indicative of hyperglycemia. Strong evidence for biochemical risk factors associated with cardiovascular disease and diabetes was, therefore, lacking. Neither did we detect an expected link between iron deficiency and overweight or obesity[33]. Insufficient dietary intake of iron in overweight and obese children and increased iron needs is generally attributed to unbalanced nutrition or repeated short-term restrictive diets[33]. But regular consumption of red meat, especially as hamburger, in American Samoan children may provide sufficient iron in their diet.

To our knowledge ours is the first attempt to measure blood biochemical markers in Samoan adolescents. Studies during the late 1970s that measured total plasma cholesterol and triglycerides in Samoan adults found that, despite higher rates of obesity, levels of total cholesterol were well below those of the United States population at all ages and in both sexes[34]. Samoans had much lower total cholesterol levels at

any level of BMI than the levels found in other developed countries, suggesting a physiology characteristic that results in low plasma cholesterol levels relative to body fatness and dietary fat intake.[34]

The absence of these markers in our study must be interpreted with caution, since they conflict with evidence for such markers in studies[35, 36] of obesity in non-Samoan adolescents and the prevalence of cardiovascular disease, diabetes, and other lifestyle-related chronic diseases in American Samoan adults.

Our results argue for a serious obesity problem affecting American Samoan adolescents. While it may be desirable and practical to eventually tailor an obesity screening tool specifically for Polynesians, the ramifications of unchecked obesity in American Samoan youth make it imperative that the problem be addressed now based on the best available evidence rather than wait for the best possible evidence.

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"Body and soul cannot be separated for purposes of treatment, for they are one and indivisible. Sick minds must be healed as well as sick bodies."

- C. Jeff Miller

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Evolving directions in health promotion workforce development

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ABSTRACT

PROJECT CONTEXT: Leaders in the fields of public health and health promotion increasingly advocate a socio-ecological approach to meet contemporary and emerging population health challenges. It is essential that health promotion workforce development initiatives mirror the evolving direction of the field to facilitate translation of theory into practice. To date, there has been limited effort to map the socio-ecological approach into tertiary education curricula.

PROJECT DESCRIPTION: This project was undertaken as part of the development process for an undergraduate health promotion degree in Queensland, Australia. A review of the health promotion workforce development literature was undertaken. Group processes, key informant interviews and a Delphi technique were used to engage health promotion academics and practitioners, including an International Health Promotion Expert Advisory Panel, and an Industry Advisory Group in defining the components of the program.

FINDINGS: The consultative processes facilitated the development of an undergraduate health promotion degree program underpinned by the socio-ecological approach with strong emphases upon the processes or 'how you do it' of health promotion together with evidence-based decision making and practice.

CONCLUSIONS: As the basis and practice of health promotion progresses toward a socio-ecological approach, workforce training needs to keep pace with these developments to ensure an appropriately skilled health promotion workforce to meet emerging population health challenges. The reported project and the degree program that has been developed is an example of one step towards achieving this important and necessary shift in health promotion workforce development in Australia.

Introduction

To meet global population health challenges, responses are needed that address health determinants to promote sustainable and positive lifestyles[1]. It is increasingly recognised that the multi-causal nature of health and illness means there is a need to move beyond behavioural change interventions to more holistic, integrated, interdisciplinary approaches to secure long-term population health.

Health promotion provides both an orientation to securing of population health with a suite of models, strategies and processes for understanding and actioning population health with its multi-level and multi-strategy operations across the social system[2,3].

Since the concept of "health promotion" was first coined it has evolved from a focus upon behaviour change through health education, to a comprehensive socio-environmental orientation to health operationalised through an integrative settings approach. This evolutionary process for health promotion is set to continue with a growing emphasis upon the importance of a socio-ecological approach to underpin the practice of health promotion and advance public health in the 21st century[4,5,6]. Contemporary and anticipated health challenges increasingly necessitate more holistic, "upstream" or determinants-oriented and preventive population-based approaches to health[7]. There will be an ever-increasing need for an emphasis upon health promotion to secure long-term population health. It is imperative that health promotion workforce development mirror the evolving direction and projected health challenges to facilitate timely translation of theory to practice.

To date, there has been limited effort to map the socio-ecological approach into tertiary health promotion curricula.

The present project sought to explore and define the components of a tertiary degree program underpinned by a socio-ecological approach to health promotion. It was undertaken as part of the development of a new undergraduate health promotion degree at Griffith University, Australia.

Project description

The development of the Griffith University Bachelor of Health Promotion (BHProm) was undertaken from June 2004 to January 2005. In accordance with the participative and collaborative nature of contemporary health promotion practice, consultative processes were implemented that engaged local and international health promotion academics, practitioners and representatives of prominent health promotion organisations in debate about the theory, practice and values of contemporary health promotion8.

The project used a cyclic data collection/analysis approach to build consensus among project participants, and methods included group processes, key informant interviews and an email-based Delphi technique. The consultative process engaged members of various organisations in Australia including the Australian Health Promotion Association, International Union of Health Promotion and Education, Public Health Association of Australia, Queensland Health, Health Promotion Queensland and local government, together with an International Health Promotion Expert Advisory Panel. Reviews of the health promotion workforce development literature and existing undergraduate health promotion degrees delivered across Australia informed discussions. Thematic analysis conducted on the data progressed from the identification of topics in recently collected data to clustering these topics into themes and then core elements of a health promotion tertiary curriculum.

Findings

The literature review and market analysis revealed that universities are considered a key source of suitably skilled and trained public health labour9. At the time of this project, however, only one undergraduate Bachelor of Health Promotion was offered within Australia, with a number of undergraduate and post-graduate health programs containing health promotion majors. In contrast, the consultative processes revealed strong support for specific health promotion degree programs as an important step in the discipline's evolution. The consultations also highlighted that to meet projected health challenges and facilitate timely translation of the evolving direction of the field to practice, the underpinning emphases required in such programs must be:

- A socio-ecological approach to health promotion;
- Evidence-based decision making and practice; and
- The processes or 'how you do it' of health promotion practice.

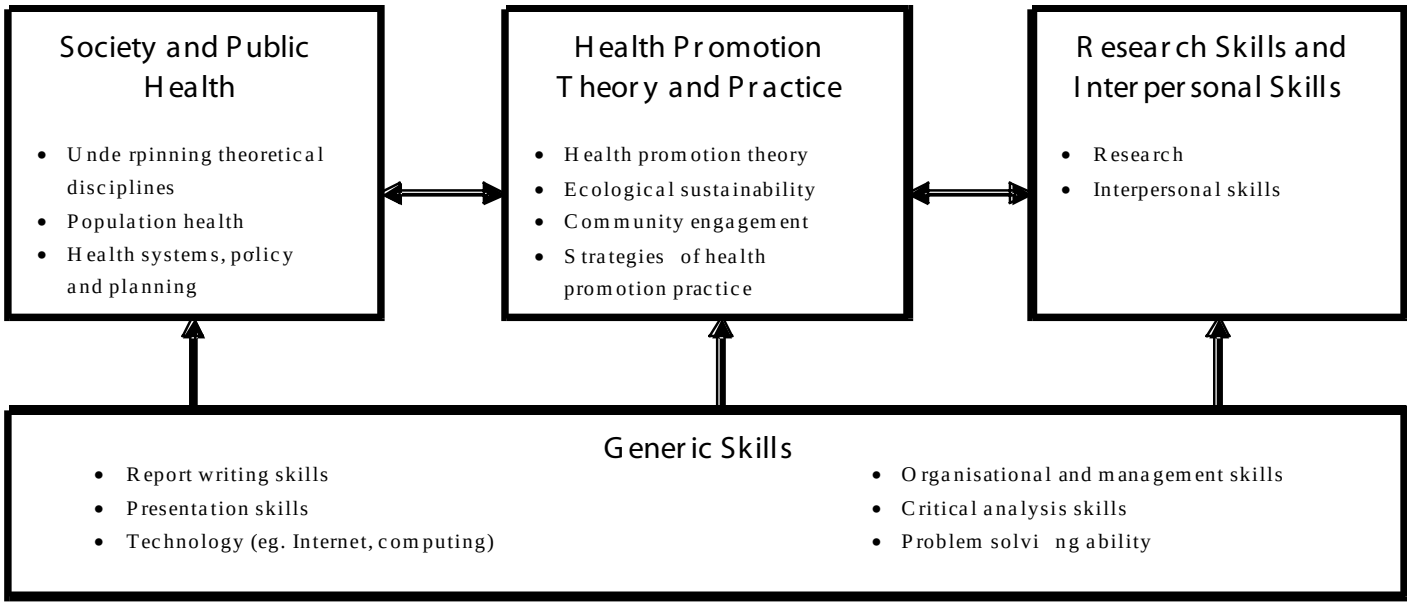
These findings confirm the anticipated need to progress the socio-ecological approach within the field of health promotion. They are consistent with the identified demand for health promotion specialists to have the knowledge and skills to deliver on health challenges and priorities to achieve more equitable population health outcomes10.

The thematic analysis of the data gathered through the consultative processes and review of the literature identified nine interrelated core areas of knowledge, skills and values (KSV) required in workforce development to progress a socio-ecological approach to health promotion. In the present project, the identified KSVs have been organised as the three pillars for health promotion training and practice, supported by a foundation of generic skills. Figure 1 displays this configuration of the KSVs and maps their broad interrelatedness with each other and the foundation of generic skills.

Discussion

The structure and content areas developed through this project reflect the evolving nature of the health promotion field. First, the study identified the need for a significant component of curricula to be focused on the structural determinants of population health and ecological sustainability to position graduates as future global leaders in health promotion. Second, this focus must be balanced with considerable attention being given to the issues and practices of contemporary health promotion. Third, emphasis should be given to the basic skills

Figure I. The Pillars of Health Promotion Training and Practice



of health promotion practice such as program planning and evaluation, project management, policy development and, perhaps most importantly, interpersonal skills and group work. This emphasis upon the processes of health promotion – 'how you do it' – advances the graduates' capacity to function effectively across the range of approaches to health promotion and issues of interest.

The overarching goal of such a program would be to develop graduates who are socio-ecological in their orientation to health promotion yet able to operate effectively within contemporary health promotion approaches. The graduate would therefore be one who continually challenges contemporary health promotion theory and practice as part of their professional leadership role to progress the field toward a socio-ecological approach that will secure population health in the future.

The outcomes of the project suggest innovative curricula are needed to progress health promotion frameworks within Australia and elsewhere towards the socio-ecological approach. Responsibility for this undertaking lies primarily with the tertiary education sector, where the health promotion workforce of the future is being shaped. The resulting approach behind the KSV for the BHProm at Griffith University responds to this by drawing together a wide range of skills, practices and disciplines to promote a focus upon the social determinants of health together with an emphasis upon collaboration with societal stakeholders and sectors3, 10, 11. The approach also recognises that a tertiary degree program is far more than practitioner competencies and must also nurture an orientation, passion and commitment for health promotion in graduates.

Conclusion

In response to the need to address global population health issues, this study confirmed the demand for health promotion specialists who have the knowledge and skills to deliver on health challenges and priorities to achieve more equitable population health outcomes10. Health promotion workforce development is central to achieving the required shift from the current focus upon risk factor reduction and behavioural change interventions to more holistic, integrated, interdisciplinary approaches to secure long-term population health. Griffith University's BHProm development process confirmed broad support for workforce development to promote a socio-ecological approach to health promotion, ensure skills for evidence-based practice and a focus upon process or skills to actually practice health promotion. To achieve this, stronger leadership and linkages between workforce development and practice are needed. The BHProm is a step in this direction.

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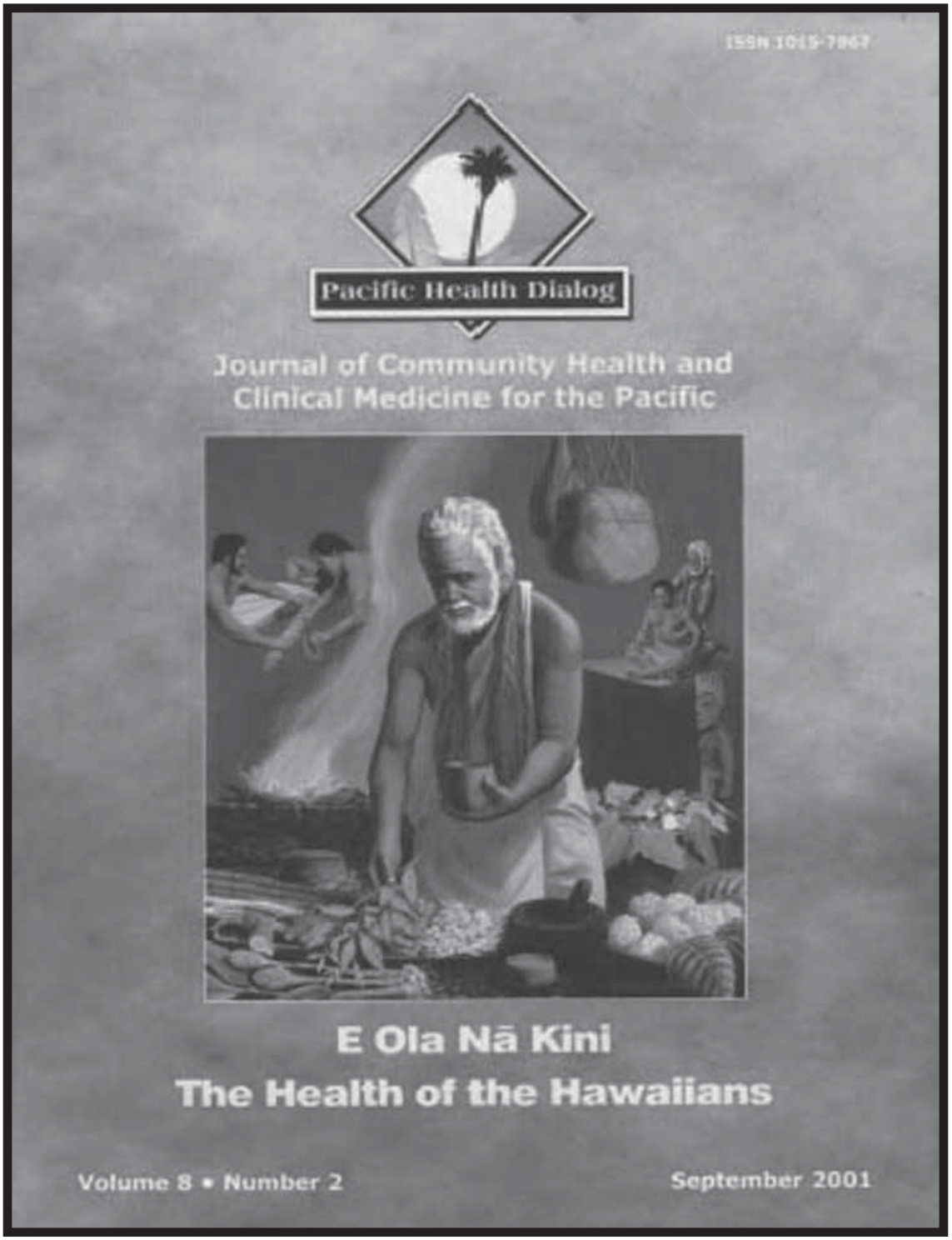
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Towards prevention of breast cancer in the Pacific: Influence of diet and lifestyle

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Abstract
Breast cancer is a multifactorial disease which has created a significant health problem worldwide. The literature suggests that there is an increase the prevalence of breast cancer among the Pacific Islanders in the last two decades. Factors which influence breast cancer risk include gender, genetic mutation, diet, parity and endocrine. Nutritional studies and epidemiological surveys show that dietary and lifestyle factors play significant role in breast cancer risk. Breast cancer risk is reduced by regular intake of fruits, vegetables and omega-3 fatty acids-rich diet. Whereas obesity, smoking, alcohol consumption and sedentary lifestyle increase breast cancer risk. Breast feeding practice is protective against breast cancer. Intensive awareness campaigns and public education are necessary to discourage risk behaviour among the pacific islanders.

Introduction

Statistics showed that breast cancer is a major problem worldwide. In developed countries, breast cancer is the second leading cause of cancer-related deaths among women and it is estimated that 1 in 8 women will develop the disease during their life time.[1] Studies performed in University of Hawaii showed that the incidence and mortality of breast cancer have been rising among native Hawaiian women who have been living in Hawaii since 1976.[2] Similar findings of rising incidence of breast cancer among Asian American and Pacific Islanders (AAPI) were also reported from California State University.[3] Higher mortality from breast cancer has been reported among Maoris compared to non-Maori women in New Zealand.[4] Anecdotal statistics from the Ministry of Health Fiji 2005 annual report showed that there has been a high incidence of breast and cervical cancers in Fiji.

Despite advances in surgical and oncological treatment, breast cancer still remains a significant problem in most countries. International agency for research on cancer estimates that 25 percent of breast cancer cases worldwide are due to overweight / obesity and a sedentary lifestyle.[5] Dietary factors and physical inactivity are estimated to account for about 35 percent of cancer death in the United States.[6] From the foregoing, it is obvious that diet and lifestyle, among other behavioural and environmental factors, are important risk factors in the prevalence of breast cancer. Certain risk factors can be modified by increasing public awareness of the disease. Research performed in Queensland, Australia, for example, revealed that Aboriginal women's attitudes and perceptions towards breast cancer prevention can be improved by increasing societal awareness of the disease, highlighting the benefits of preventive health services and provision of counseling services.[7]

...Aboriginal women's attitudes and perceptions towards breast cancer prevention can be improved by increasing societal awareness of the disease.

The paper is written to highlight the role of dietary and lifestyle factors in breast cancer, and to advocate for awareness campaigns against high risk habits among Pacific Islanders.

Discussion

Role of diet Fruits, vegetables and soy rich foods.

Regular consumption of fruits, vegetables and soy rich foods is associated with significant reduction in risk of developing breast cancer in women. Examples of such foods are leafy vegetables, carrot, pumpkin, lettuce and cabbage based on observational and epidemiological studies performed in Western countries and Asia.[8-10] Consumption of soy rich food is significantly inversely related to breast cancer risk in many studies.[11] Soy food contains a phytochemical isoflavone genistein, a biologically active compound associated with reduced breast cancer risk in women who consume soy rich diets. Isoflavone has been reported to cause suppression of cell proliferation and stimulation of apoptosis thereby inhibiting tumorigenesis.[12] Early introduction of risk-reducing diet is associated with reduced breast cancer risk.[13]

Studies have shown that there is a racial variation in biological characteristics of breast cancer. Lifestyle among other factors is an important contributor to these observed variations.[14] For example research has shown that majority of native Hawaiian women living in Hawaii have predominantly estrogen/progesterone receptors (ER/PR) positive tumours.[15] In contrast, reports from other studies revealed that ER/PR

receptor negative tumours are more common among many races (migrants) living in the USA[14]. Recent studies show that Samoan women tend to present at young age with advanced breast cancer[16]. Phytochemical isoflavones found in ***red clover*** and soy have affinity for estrogen receptors, alpha and beta, (ERα and ß), progesterone receptors (PR) and androgen receptor (AR). The higher affinity of isoflavones for ER ß relative to ERα is responsible for the observed efficacy of ***red clover*** in reducing the risk of breast cancer and amelioration of post menopausal symptoms[17]. These phytoestrogens have antioxidant properties in addition to oestrogen receptor modulator and oestrogen enzyme modulator activities[17]. One may postulate that women with ER/PR positive tumours may benefit from the use of ***red clover***.

Flaxseed is another plant that has been demonstrated in many studies to have an antitumor effect. The plant contains edible oil and a lignan precursor (secoisolariciresinol diglycoside). Both components have been shown to inhibit breast cancer growth and metastasis.[18-20] Indole-3 carbinol is found in cruciferous vegetables (cauliflower, broccoli, brussel sprouts). The latter has been shown to reduce the amount of carcinogenetic forms of oestrogen and increase the beneficial form[21].

For example, there is an increasing trend in the consumption of food high in salt and fat content such as ham, spam and canned fish among the Palauans.

Fats and Oil

According to the American Dietetic Association's guidelines, a healthy balanced diet contains 50 percent of calorie as carbohydrate, 30 percent as fat and 20 percent as protein[11]. When the fat content of diet is more than 30 percent, the diet is said to be a high fat diet[11]. Consumption of a high fat diet is common place in some Pacific Islands. For example, there is an increasing trend in the consumption of food high in salt and fat content such as ham, spam and canned fish among the Palauans. This dietary habit is a result of westernization but could be changed by public enlightenment and development of nutritional health education to address issues such as selection of healthy food, preparation of balanced meals and obesity[22].

A diet high in dietary fats especially the omega-6 fatty acids found in dairy fats, animal fat and oils is associated with an increase in mammary tumour incidence[23]. Whereas a diet rich in omega-3 fatty acids protects against breast cancer and heart disease[13, 23]. Omega-3 fatty acids are found in mackerel, herring, sardines, tuna and salmon. Other sources of omega-3 are soy beans, soy sauce, canola, walnut, flaxseed and their oils. The American Heart Foundation and the Heart Foundation of Australia recommend that food rich in Omega-3 fatty acids such as mentioned above should be consumed twice a week[24]. Similarly intake of high fat diet (omega 6) coupled with high body mass index (BMI) is associated with increased lipid peroxidation (cell damage). Increased intake of arachidonic acid, which is found abundantly in meat, is directly related to DNA damage[25]. Lipid peroxidation, which leads to cell membrane instability as well as DNA damage, increases susceptibility of cells to malignant transformation. Moreover, low serum level of high density lipoprotein-C (protective lipid) is associated with increased risk of post-menopausal breast cancer[26]. Foods such as egg, animal butter and oil are poor in serum high density lipoprotein (HDL) but rich in serum very low density lipoprotein (VLDL). The later is associated with increase risk of heart disease and breast cancer[24].

Lifestyle

Alcohol consumption and smoking

In addition to other effects of alcohol on body metabolism, there is a strong association between alcohol intake and prevalence of breast cancer in women. The evidence is based on epidemiological studies reported by World Health Organisation[6]. Studies have shown that the relative risk of breast cancer is increased, in both premenopausal and postmenopausal women, by 7% for every 10g of alcohol consumed per day[5]. The association between alcohol consumption and increased breast cancer risk has been observed irrespective of type of alcohol consumed[5]. Data from animal experiments suggest many possible mechanisms of alcohol's action in the observed increase in the risk of breast cancer[5]. Smoking may inhibit detoxification of alcohol, or impair liver clearance of carcinogen.[5] Studies have also shown that those who consume alcohol are likely to be exposed to both active and passive smoking[27]. Smoking and environmental tobacco smoke (ETS) are associated with increased breast cancer risk[27, 28]. There is an increase in breast cancer risk in women who start smoking as teenagers and continue to smoke for at least 20 years[8, 29-31]. Similarly, prolonged exposure to environmental tobacco smoke (passive smoking) is associated with increased breast cancer risk[32, 33].

Tobacco use is almost in epidemic proportions among Asian Americans and Pacific Islanders (AAPI) men, and recently it has also been revealed that there is an increase use of tobacco among AAPI women and girls. In fact, the highest percentage of smokers aged 15 years and over reside in East Asia and the Pacific with smoking prevalence of 34%[34]. Rampant tobacco use has become a social norm in Palauan society including the use of smokeless tobacco (Quid) especially among women[34]. This implies that many of the AAPI are exposed to the hazards of passive and active tobacco smoking (ETS).

Exercise and obesity

Studies indicate that women who engage in moderate exercise 3-4 hours per week have a 30-40 percent lower risk of breast cancer than sedentary women[5, 8]. Overweight and obesity increase the risk of breast cancer in post-menopausal women[6, 35]. The risk of breast cancer is increased significantly when body mass index (BMI) is equal to or greater than 25kg/m^2. Similarly, the serum level of high density lipoprotein–C decreases appreciably[26]. Moreover there is a 50 to 250 percent increase in breast cancer risk for post menopausal women who are overweight or obese (10 percent above normal body weight)[5]. In contrast, total calorie restriction, which directly contributes to weight reduction, is associated with reduction in breast

cancer risk[1]. The problem of obesity among Pacific populations is exemplified by a study of Palauan elderly which showed that majority of subjects were obese with a mean body mass index (BMI) of 27.0 in males and 28.9 in females, and with mean body fat percentage of 20.3 in males and 39.8 in females[22].

Breast feeding and child bearing

Breast feeding practices and child bearing decrease breast cancer rate. The longer the duration of breast feeding, the lower the odds of developing breast cancer[1]. This effect is cumulative and becomes appreciable in risk reduction after a total period of one year of breast feeding[36]. Breast cancer risk decreases with early child bearing, high parity and physical activity[21]. The effect of breast feeding practices and child bearing on breast cancer rate are complementary.

Conclusion

Evidence from the literature shows that the intake of some food items and indulgence in certain behaviours are associated with an increased risk of breast cancer. In view of the fact that consumption of unhealthy foods, alcohol, smoking, obesity and other lifestyle risk factors are common in the Pacific, targeted intervention is required. The intervention should include strategies that will focus on development of nutritional education, reduction in importation of high-risk foods, formulation of government policies to discourage indulgence in risk behaviour, awareness campaigns about breast cancer and benefits of preventive health practices, training of local health professionals, and provision of family and social support. Coordinated efforts on the parts of the governments of the Pacific countries, international organizations, and the local community are required to ensure the success of these strategies.

Recommendation

- Reduction in total calorie intake coupled with regular and moderate exercise will keep the body weight within an acceptable range.
- Balanced diet rich in vegetables, fruits and omega-3 fatty acids is recommended.
- Abstinence from smoking (both passive and active) is essential.
- Breastfeeding practices should be encouraged.
- When possible women should have their babies earlier than later.

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"If you pick up a starving dog and make him prosperous, he will not bite you. This is the principle difference between a man and a dog." - Mark Twain

Nutrition Communication in the Pacific

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Abstract

This paper summarises the findings of a scoping study to analyse and guide nutrition communication in some countries in the Pacific region. Nutrition is fundamental to achieving good health and preventing the rising prevalence of non-communicable disease. Dietary patterns are influenced by many factors and complex interactions, such as income, food prices, individual preference and beliefs, cultural traditions, as well as geographical, environmental and social factors. These interactions, the quantitative and qualitative changes in the diet, and the accompanying lifestyle changes seen in recent years, make a collaborative approach to behaviour change essential. This study suggests that by supporting nutritionists to promote nutrition, improve public awareness and by addressing key areas influencing nutrition communication, gains towards improving public health can be made at a regional level.

Background

A nutrition scoping study to identify the current food environment, programs, resources and communication practices in some Pacific Island countries was requested by the Pacific Senior Health Officials Network (the Network). The scoping study was undertaken between October 2005 and February 2006 and funded under the Pacific Governance Support Program (PGSP) by the Australian Agency for International Development (AusAID). The results were presented during a meeting of the Network in March 2006 and compiled in a report[1]. Participating countries included Papua New Guinea (PNG), Republic of the Fiji Islands (Fiji), Republic of Kiribati, Samoa, Republic of Nauru, Solomon Islands, Kingdom of Tonga, Tuvalu, Republic of Vanuatu, Australia and New Zealand.

This work was initiated in recognition of the importance of good nutrition in preventing non-communicable diseases, an increasing problem in the Pacific region. The project made progress against both the *Global Strategy on Diet, Physical Activity and Health*[2] and the *Tonga Commitment to Promote Healthy Lifestyles and Supportive Environments*[3] by generating discussion and raising awareness on nutrition issues across relevant sectors in participating Pacific Island Countries (PICs).

Objective

The aim of the nutrition project was to work in collaboration with Pacific Ministries of Health to:

- Examine options for health eating promotion through:
  - assessing the feasibility of a regional healthy eating communication strategy based on the needs and culture of member countries and existing activities,
  - study of regional resources for promoting healthy eating and potential for common communication messages, and
  - researching the role of local nutritionists in health promotion activities.
- Establish collaborative relationships at project officer level to improve implementation of public health nutrition interventions in the Pacific.

Methods

Information from PICs on nutrition promotion activities was collected through:

- In depth interviews with key informants during visits to three Pacific Island countries selected by the Network; PNG, Fiji and Kiribati,
- A paper questionnaire completed by participating Pacific Island nutritionists which covered nutrition policy, promotion activities, food supply and behaviours and regional assistance required, and
- A review of relevant key documents and literature.

Results

A broad range of health issues are of concern in the region and it is evident that many PICs face the double burden of diseases. There is a need to address over-nutrition, obesity and associated chronic diseases as well as under-nutrition in women and protein energy malnutrition (PEM) in children. Micronutrients deficiencies (e.g. anaemia, iodine deficiency disorders) were also identified as major problems.

1. Public Health Nutrition Policies and Collaboration

All Network member countries have either a national nutrition policy or national plan of action for nutrition[4]. In addition, many countries have other policies in place that incorporate nutrition (e.g. non-communicable diseases, food security and health promotion).

To date there has been considerable effort to tackle both under-nutrition and over-nutrition across the region. The need for effective collaborative relationships between government ministries, levels of government, non-government organizations (NGOs) and across the region were apparent. Each nutrition policy document lists a significant number of cross-sectoral stakeholders such as relevant Ministries (i.e.

Health, Agriculture, Education, Social Welfare/Community Development, Women, Information and Communication, Youth and Employment), private sector groups (i.e. Chamber of Commerce, food industry, academic institutions) and NGOs (i.e. Island Development Trust, Red Cross, Council of Churches and Consumer Society).

Inter-sectoral collaboration is not easy and many countries experience difficulties in implementing nutrition policies. This occurs for example, when policies to address food supply issues are not consistent with health promotion policy.

2. Health Promoting Activities and Public Awareness

Health promotion is an integral part of nutrition projects. Nutrition focus areas are as wide ranging as the problems identified. PICs reported nutrition promotion activities for: maternal nutrition; nutrition for children; fruit and vegetable promotion; local foods; traditional foods; processed foods; infants and young children; basic hygiene and sanitation and non-communicable disease (NCD) prevention. This list is not exhaustive.

Radio is an important tool especially for reaching people in outer islands who often are very isolated.

Target groups for nutrition promotion vary depending on the priorities of PICs. Emphasis depends on the project focus and can be on the general population, school children, mothers, children under-5-years, people living with HIV and AIDS, to name some examples.

Health/community workers, NGOs, women's fellowship and church groups use a variety of methods to promote healthy lifestyles and raise public awareness of health issues. PICs have a strong history of oral communication relying on the spoken word which is preferred to written literature. Radio is an important tool especially for reaching people in outer islands who often are very isolated. Many small islands throughout the Pacific have no other way of communicating with the outside world or the main island. Television and Internet are only accessible in the main centres and the costs involved prohibit its widespread use as a health promotion medium at this point in time. The preferences of the target groups are taken into consideration when nutrition promotion programs are designed. Young people for instance like to listen to the radio. Radio is also a good medium for mass campaigns. One-to-one counseling is chosen when more individual advice is sought on risk factors for NCDs and necessary lifestyle adjustments. Mothers, who want to learn about complementary feeding, are keen on practical and cooking demonstrations.

Community Action and Participation (CAP) builds upon this tradition of story telling and reaching a consensus. The general population is not aware of the link between good nutrition and health. Through the CAP approach, communities can learn to understand this link, thereby becoming empowered and motivated to adopt healthy lifestyle and food choices. PNG and the Fiji Islands both use this approach within the Healthy Islands framework where individuals, families and communities are empowered to take responsibility for their own health. Each Healthy Island setting (e.g. health-promoting schools, villages, market places) develops specific objectives and implements a plan of action[5].

3. Public health nutrition and food monitoring and surveillance activities

Sufficient data to develop and implement evidence-based policies and interventions in nutrition is not always available. In many PICs clinical records and health service facilities provide data on low birth weight, childhood underweight or stunted growth, diabetes, heart disease, cancers and stroke, to name but a few. These are, however, not always collected on a routine basis, nor are they complete.

Several countries are in the process of conducting WHO STEPS surveys and other national surveys. WHO STEPS is a tool to help low and middle income countries to collect (baseline) information and set-up surveillance systems for NCD risk factors. This is a complex and expensive exercise, and PICs need technical support to produce the final reports. More and more cost-benefit analyses are being carried out to show the impact of micronutrient deficiencies, under- and over-nutrition, and NCDs on national economies. The impact can be considerable, hampering national development. Families can suffer long-term impacts such as the need to purchase medicine to manage diabetes for the rest of the affected family member's life. Building stronger evidence by identifying research gaps in the economic justification for action on improved diet and physical activity is needed in the Pacific, particularly in the context of NCDs and burden of disease data.

4. Resources to deliver services

Capacity to deliver nutrition services is limited in most PICs. This applies to staffing levels and resources for communication. Most countries employ one or two nutritionists responsible for coordination of service delivery and intra-sectoral collaboration. Very often, nutrition is not seen as a priority but as a support service. The Nutrition Centres established after the World Nutrition Conference in 1992 depend very much on the enthusiasm of a few dedicated individuals in the different sectors to be successful. Training is not appropriate and options to gain higher qualifications are limited as Fiji School of Medicine is the primary institution in the Pacific to offer degrees in dietetics and nutrition. Many nutrition programs struggle with un-reliable communication within and between countries.

Discussion

1. Public Health Nutrition Policy and Collaboration

There is a need to ensure that public health nutrition policies are well integrated to help make healthy choices easy choices. Policies developed by different sectors (such as, education, women's welfare, agriculture, commerce and trade) have an impact on nutrition and consistent public health goals within these sectors are necessary to achieve positive changes. Policies of different sectors are sometimes contradictory because of competing interests and priorities.

For instance, the PNG Rice Development Policy is aimed at lowering the considerable import bill by increasing local rice production. At the same time the PNG Health Department is actively promoting the use of traditional staple foods and discouraging the consumption of rice in an effort to improve general health and lower the impact of NCDs.

Another example relates to the sale of street food. A street vendor tries to earn an income but this is sometimes at the cost of public health, as street food is often unsafe to eat because of unhygienic preparation. Often it is also a less healthy option with street stalls selling foods such as fatty meats, fried bananas and flour balls. This example highlights the need for collaboration between health inspectors and social welfare departments and public health policy makers.

Approaches to reduce costs of healthier imported food and increase relative costs of less healthy imports, combined with food labeling are important food importation policy issues. Such policies complemented by increased public awareness could lead to behaviour change and improved nutrition. Yach and colleagues remarked that initial tobacco control interventions were not evidence-based but represented sound judgment at the time[6]. They continue, that actions such as restrictions on advertising, pricing interventions, and broad community projects can be effective at changing behaviour and could be used to improve diet and physical activity. To be successful, effective collaborative relationships are required between levels of government, between ministries and agencies, and between government and NGOs.

Diversity between countries means any strategy would need to be sufficiently flexible for use in all islands but precise enough to produce action.

2. Nutrition Promotion Activities and Public Awareness

The availability of dietary guidelines, promotion and consumption of local foods and the use of schools to promote nutrition are the three prominent issues relevant to public awareness and behaviour change. Encouraging consumption of local food is important in Network member countries and several countries focus on it with their health promotion material. The Secretariat of the Pacific Community (SPC) has incorporated local foods into the generic dietary guidelines, developed for use in PICs. The reasons for the declining consumption of local food are complex and varied. One key reason is that people, if they have the money, want to add variety to their diet through store-bought food. A longitudinal study of the Wopkaimin people (the landowners of the Ok Tedi mine in Western Province, PNG) revealed that villagers living closer to the mine bought up to 50% of their food intake-by-weight from the store. They tended not to make as many food gardens as people living further away from a mine.[7] This has led to changes in the dietary habits of the local people, increasing within a few years the prevalence of chronic lifestyle-related diseases such as obesity, hypertension and coronary heart disease[8].

Pacific Island societies rely on imported foods for food security and few countries can produce enough food to sustain their growing populations. Therefore nutrition education should focus on how to best combine local foods and healthy imported food items to attain the best possible health outcomes for Pacific Island communities. Dietary guidelines could be of help by including information on meal portion sizes. Pacific people can consume large quantities; a daily intake of 3 kg root crops is not exceptional. There is evidence that intake of large quantities of food continues with adoption of modern diet, although rice is more energy dense and physical activity levels are usually lower.[9]

Schools provide a sustainable avenue for improving awareness on a range of issues relevant to nutrition such as agriculture, marine environment, water conservation, food, physical activity and health. Canteen guidelines can actively promote healthy diets in schoolchildren. Gatherings of Parents and Teachers Associations can be used to promote healthy diets. The more mothers know about food and nutrition the better the quality of their children's diets[10]. Expanding and promoting existing regional nutrition guidelines while increasing the focus on local foods could contribute as the foundation materials for nutrition education in the region. These could then be utilised by nutritionists/educators/ health workers in both school and broader community settings to improve awareness of food choices, preparation and serve sizes.

The CAP approach is used in PNG and Fiji as a starting point for Healthy Islands initiatives. The CAP approach builds on the tradition of oral communication and empowers communities to take action through better understanding of health and nutrition issues affecting their communities. Committees and support groups are set up to guide initiatives. Family Support Groups, Village Health Volunteers and Healthy Islands Committees provide information, counseling and where appropriate refer onward for medical treatment. Members of these groups can reinforce public health messages through face-to-face counseling. The link between nutritionists, health workers and community groups should be strengthened to increase the capacity to give information, encourage informed discussion, and support community actions. Community reinforcement is particularly important as activities which provide varied avenues for health promotion (individual- and community-based), stand the best chance of success[9].

Diversity between countries means any strategy would need to be sufficiently flexible for use in all islands but precise enough to produce action. A concern was raised that if nutrition communication were part of an NCD strategy the focus of specific nutrition issues (e.g. anaemia, iodine deficiencies disorders) may be lost as part of a more general agenda. One-way to overcome this would be to promote optimal diets, which could incorporate all nutrition and NCD risk factor issues. Strengthening support through a network for nutritionists could be a key starting point to a collaborative approach.

3. Monitoring and Evaluation

Ongoing monitoring and evaluation of population nutrition status and relevant programs is necessary to measure progress

against targets or define new ones. Evaluation of nutrition interventions is equally important. Many nutritionists and relevant policy makers would benefit from evaluation results and lessons learned from successful and/or unsuccessful activities to improve nutrition. A central collection point for this information would be of use across the region as a formal mechanism for shared experiences and learning. In general these activities are not part of a long-term monitoring and surveillance program, but remain necessary for planning and policy development.

Information collected through Health Information Systems from hospitals and health centres is not truly indicative of the health and nutrition status of the general population, as sick people use the services more often and people in remote areas or too far away from the health facilities do not use them as often. Hence, there is a need for population based surveys to provide information on which to base comprehensive policies and guidelines to improve public health. Examples include National Micronutrient Surveys, WHO STEPS Survey, Household Food Consumption Survey, and Demographic & Health Surveys. The information obtained depends on the design and complexity of the survey (anthropometry, questionnaires, biochemistry samples, food samples), resources available (human, financial, laboratory) and survey logistics. The costs of these surveys are considerable as transport costs are high in the Pacific. However, population based surveys are necessary to get the "true" picture.

In view of the technical and financial limitations on food supply monitoring in PICs, Network members could also consider pooling resources to examine how, as a Pacific community, efficiencies can be gained. As an example, Food and Agriculture Organization member countries produce regular food balance sheets (useful for trends indicating decline of root crops and increase in cereals) which could be used as a basis for beginning to collaborate on regional monitoring and surveillance.

4. Human Resources

Workforce capacity was one of the most frequently raised challenges preventing the successful implementation of nutrition activities, in terms of both staffing levels and resources (such as access to current texts, reliable computers, communication tools – telephone, facsimile, email and internet). An in-depth analysis of nutrition workforce capacity and training needs is recommended, where duty statements are matched with available training. Lessons from the control of tobacco support call for a commitment to nutritional objectives, including assigning specific resources to nutritional programs and a willingness of government and other sectors to accept flexible administrative structures for tackling malnutrition.

Table 1 summarizes recommended activities arising from the findings of this study for strengthening nutrition workforce capacities across the Pacific.

Table 1. Recommended Activities to Improve Nutrition Communication Workforce capacity in the Pacific

Proposed Action Areas	Potential Activities
Improving capacity of nutritionists to communicate with colleagues across the region.	• Upgrading access to reliable telephone, facsimile, email and Internet services.
	• Where necessary allow access to Internet services on a roster system to minimise costs.
Supporting a network of Pacific Island country nutritionists to collaborate on public health nutrition issues.	• Facilitating information sharing through group teleconferences or existing email groups.
	• Engaging relevant partners when necessary to increase participation and interest (eg invite agriculture colleagues to join for particular discussions).
	• Sharing information suitable for common use (eg program evaluations, food composition data).
Working with the Secretariat of the Pacific Community to improve support available to Pacific Island countries for nutrition promotion activities.	• Building on the existing SPC healthy eating guidelines.
	• Increasing regional focus on local food promotion.
	• Furthering work to improve portion size education.
Advocating for continued support for regional positions relevant to nutrition.	• Raising the profile of regional nutrition positions to better support Pacific Island countries and integrate planned activities.
Building on and expanding existing activities relevant to regional nutrition.	•Enhancing collaborative action through the planned workshop on Implementing the Global Strategy on Diet, Physical Activity and Health, WHO Western Pacific Regional Office.
	• Utilising the experience and sharing implementation of the recommendations from the Role of Information and Communication Tools in Food and Nutrition Security in the Pacific, workshop held in 2005 by Institute for Research, Extension and Training in Agriculture – Technical Centre for Agriculture and Rural Cooperation.
Considering future activity relevant to nutrition communication in the region.	•Developing a proposal for a regional communications strategy to complement existing work and build on the above activities.

Conclusion

Nutrition communication in the Pacific is challenging as regards both the opportunities nutritionists have to work collaboratively as a profession and also to improve public awareness of choices and behaviours that will lead to better nutrition and ultimately long-term health. Income, food prices, individual preference and beliefs, cultural traditions, as well as geographical, environmental and social factors all interact in a complex manner to shape dietary consumption patterns. These interactions and the accompanying lifestyle changes seen in recent years, make a collaborative approach to behaviour change essential. To progress collaborative efforts in the region a communications strategy should be developed which would be flexible enough to allow for differences across the region and solid enough to guide change in eating habits and improve consumption and composition of locally produced foods. Any strategy should be supported by activities, which improve the capacity of nutritionists to communicate with colleagues across the region, enhance existing activities relevant to regional nutrition and improve support available to PICs for nutrition promotion activities.

As there are extremely varied environmental settings and related difficulties within countries and across the Pacific (highlands, coastal, rural, urban, atolls etc) and problems range from malnutrition and micronutrient deficiencies to an increasing risk of non-communicable diseases, collaboration between countries could have additional benefits in minimizing duplicated efforts and through information sharing. Any regional communication strategy, which seeks to raise public awareness of nutrition, should include food security and food supply issues in addition to food behaviour issues. This is important given the many factors that influence food choices.

There is a common direction particularly at project officer level to improve nutrition outcomes for Pacific Island populations and a recognizable enthusiasm to ensure small gains continue to be made in often challenging situations. Communication activities to promote health and wellbeing are effective and appropriate in improving nutrition, especially if a mix of methods is used.

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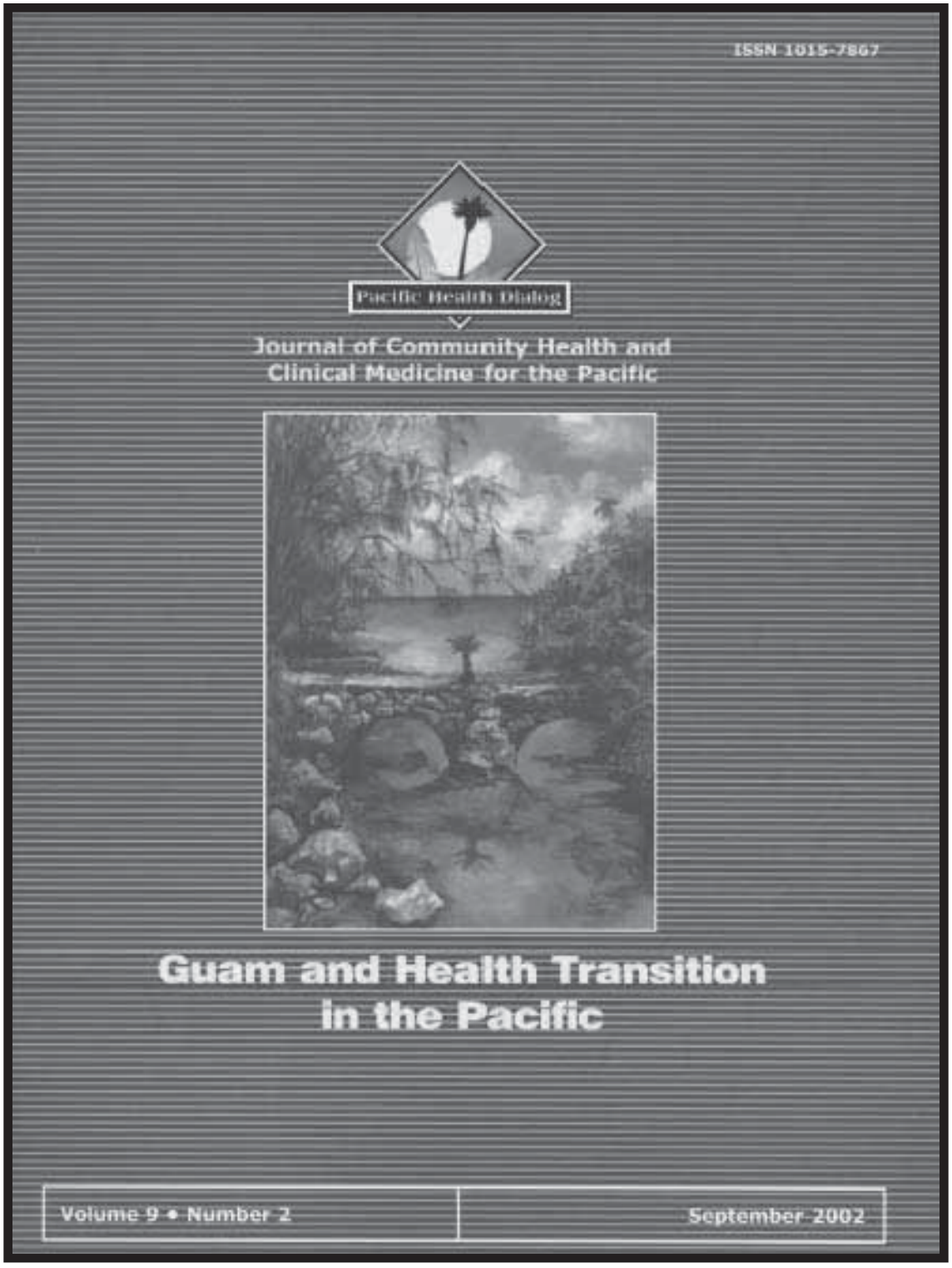
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Some lessons in tackling social determinants of health in resource-poor settings: health promotion with young people in Vanuatu

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Abstract

Community based health promotion initiatives are recognised as important strategies to address the growing burden of non-communicable diseases in developing countries. However, limited knowledge exists on how such initiatives work in practice. One innovative health promotion program of work, the Pacific Action for Health Project, is working with young people and communities in the Pacific country of Vanuatu to offset the future effects of risk factors for these diseases, through optimising broad lifestyle and living conditions for the positive promotion of health. Recognising the established link between non-communicable diseases and their social determinants, the Pacific Action for Health Project works with young people to address these determinants at the community level including, but not limited to, unemployment. This paper appraises the program based on a constructivist approach to data gathering and analysis, with observations made in the field subsequently interpreted through the health promotion literature on community empowerment. From the data collected, six themes emerged as key attributes through which the program achieved its planned outcomes. Subsequent analysis through the community empowerment literature, specifically 'dynamic continuum' models of community development, provided deeper analysis of the program's strategies and offered insight into how the literature on community empowerment may work in practice in a resource poor context. In addition to the development of locally specific empowerment measures as indicators for future program evaluation, further ethnographic work and participatory-action research approaches are encouraged to assist the future development of the program.

Key words: non-communicable diseases; social determinants; resource-poor contexts; community empowerment.

Introduction

Non-communicable diseases (NCDs), also termed chronic or lifestyle diseases, have become a huge burden in many resource-poor settings, in addition to the already established burden of communicable diseases[1,2]. Community based initiatives have been offered as important strategies to prevent these NCDs occurring[2]. However a recent review of community initiative implications for resource-poor settings concluded that while there is firm knowledge on 'What should be done?' less clarity exists on 'How it should be done?'[3]. This paper investigates one program directly addressing this 'how to' question.

Recognising the established link between NCDs and their social determinants[4,5], the Pacific Action for Health Project (PAHP) works with young people to address these determinants at the community level. This paper appraises PAHP based on a constructivist approach to data gathering and analysis[6]. Observations made in the field in one country, Vanuatu, are subsequently interpreted through the health promotion literature on community empowerment.

Background

PAHP is funded by the Australian Agency for International Development (AusAID) and aims to improve the lives of young people through offsetting the future effects of NCD risk factors. PAHP operates in three countries in the Pacific: Tonga, Kiribati and Vanuatu.

PAHP is a program based on a health promotion approach integrating the strengthening of healthy public policy, the development of health-supporting legislation, the creation of healthy environments, the development of community skills and knowledge, and the building of sustainable community involvement in supporting young peoples' health. In Vanuatu, PAHP has initiated numerous community activities to empower young people, in particular 'drop-out' youth, to adopt and maintain healthy behaviours. The focus of this paper is the community-based approach and initiatives of PAHP in Vanuatu.

PAHP recognises the importance of taking a 'social determinants of health' perspective to NCD prevention, where risk factors are understood to be rooted in wider social conditions such as poverty and material deprivation[4,7], alternatively termed the 'causes of the causes' of NCDs[5]. There is a growing awareness that in both low-income and more affluent societies, NCDs are more prevalent 'among those who do not have the resources to pursue healthy choices easily'[8].

The Republic of Vanuatu is an island nation situated in the South Western Pacific Ocean. The population is currently young, with 52% aged under 19 years and 60% under 25[9]. Designated a Least Developed Country[10], much of the population lives by subsistence and unpaid work[9]. As Vanuatu's young population ages, accompanied by lifestyle changes such as diet and physical activity, cases of NCDs are beginning to increase[2,11]. The associated high costs currently experienced by other Pacific countries are already beginning to appear[12-14].

As with these other countries, young Ni-Vanuatu are increasingly faced with rapid urbanisation, decreasing consumption of local foods, limited job opportunities, and the availability and accessibility of cheap cigarettes and alcohol[15,16]. The secondary education system has an insufficient number of places (<20%) for all children to attend. This results in large numbers of school 'drop-outs', with limited opportunities for education or engagement in meaningful work, and consequent difficulty in pursuing healthy lifestyle choices.

PAHP Vanuatu takes a threefold approach to assisting young people via community based initiatives. This is achieved by increasing awareness of healthy lifestyle and behaviours, providing choices for youths where otherwise they may have none, and recognising the influence of young people's family and community on their adoption of healthy or unhealthy behaviours.

Specific community based activities include drama performances, sports competitions, youth training in harm reduction principles, youth advocacy programs, and the participation in and design of festivals. One novel strategy for health promotion has been the use of microfinance in the form of small grants and microcredit schemes. These schemes target unemployment as the primary social determinant of substance abuse.

A formal evaluation of PAHP was undertaken in early 2005[17]. This evaluation found that PAHP's community based initiatives in Vanuatu were meeting the goals and objectives of the program across process, impact and program outcome indicators. For example, in terms of youth involvement and exposure to the program, records showed targets of young people being directly involved in educational programs concerning NCD risk factors were reached, there were increases in the number of active youth groups and youth networks, and additionally an increase in community 'events' led by youth that expose large numbers of others to NCD messages. In terms of broader community involvement in the program, PAHP in Vanuatu included high level community input to the development of the NCD strategies and their subsequent implementation. Focus groups with community members and leaders supported the positive influence of PAHP on self reported risk knowledge, attitudes and behaviours.

Method

The first author (PH) was invited to undertake a three-month work placement in Vanuatu to further appraise the quality of the program's activities. This placement took the form of a focused rapid ethnographic study of PAHP. Data were collected primarily through observations recorded as field notes, analysis of program-related documents, and through informal interviews with youth involved.

The project team ensured this quality improvement exercise was undertaken in an ethically sound manner, meeting all guiding principles of the original project agreement between the project team and AusAID. Key individual stakeholders and the community in general were consulted throughout with verbal agreement provided following the oral traditions of Ni-Vanuatu. Brief interim reports and a copy of this paper

were disseminated to all interested community members as the project proceeded.

In line with good practice in qualitative research, the research took a constructivist approach, underpinned ontologically, epistemologically, and methodologically[6,18,19].

Ontologically we respected that the day-to-day realities of PAHP and youth in Vanuatu were socially constructed, and their local and specific content and form were dependent upon the persons who held these attributes[18]. The 'expertise' lay with PAHP, and the young people and communities with whom PAHP was working.

Epistemologically, we recognised the primary researcher was part of the reality being researched, '…such that the research findings [were] a creation of the inquiry process itself rather than a collection of external, already existing "facts"[6]. As a result the findings were based in the lived experience and reflective learning of the primary researcher, based on continual iterative interaction and discussion between all authors/researchers throughout the period.

'Openness' also manifests itself on a one-to-one basis. 'Storianing', that is, taking the time to talk and discuss, is a central part of community life in Vanuatu,...

Methodologically, notes were based on constant interaction during the three months in the field, with continual analysis iteratively involving comparison of different perspectives[6,19]. Elements of both action research[20] and evaluation[21] were used.

Following the data gathering, the data were analysed in the light of the literature on community based health promotion. While recognising health promotion approaches meeting evidence criteria derived in Western societies may not be the basis for successful interventions in non-Western contexts[22], PAHP was designed on Western theories. Therefore we believe appraising this data against the literature both adds value specifically to the program itself, and potentially to the future 'how to' of this form of health promotion intervention in general.

Findings

From our analysis of field notes interviews and program documents, six themes emerged from the data which we perceived as key attributes of the PAHP's community based approach. These were: 'openness', 'embracing the local', 'incrementally encouraging support', 'financial incentives', 'creating leaders' and 'positive coordination'. Each theme is discussed separately, although in practice these attributes were interwoven throughout.

Openness

Openness was seen to be essential to PAHP and was achieved through a number of means. Firstly PAHP has operated through the offices of a well respected and known non-governmental organisation, which has encouraged greater openness than if the program had been conducted through Government mechanisms.

Secondly PAHP has worked largely through word of mouth. Over time as PAHP has become known to the community, Chiefs and other community leaders are approaching PAHP rather than being approached. Culturally this fits well within the structure of traditional communities in Vanuatu and encourages a sense of ownership of activities from the outset.

'Openness' also manifests itself on a one-to-one basis. 'Storianing', that is, taking the time to talk and discuss, is a central part of community life in Vanuatu, and PAHP's coordinator has always been exceptionally willing to sit down and explain the program's purpose and potential benefits to the community.

Embracing the local

Once permission was given from the community via Chiefs and religious leaders, young people were visited in their communities and an NCD awareness-raising session was arranged. This visit encouraged young people to feel a part of the program, on their own terms and within the context of their lives.

The session covered awareness of unhealthy lifestyles for Ni-Vanuatu such as discussion on food types, particularly Western food, and responsible alcohol use. This was coupled with what can happen to families and communities as a result of changes in society. The emphasis was on promoting action and sustainability through encouraging young people to think 'where do we go from here?'

Attention typically then turned to various initiatives supported by PAHP, but qualified with the need for firm commitment from young people to help themselves through such an initiative. To help organise themselves as groups, a democratically run committee of male and female youth leaders was elected to oversee and take responsibility for the planning of projects and events, and to communicate with PAHP, thus sustaining the embrace of the local.

Incrementally encouraging support

When community events were designed with input from Chiefs and other leaders, community wide promotion of the event and its NCD message was encouraged. In communities this created as wide an engagement as possible with the activities in which young people are involved, and also served to advertise PAHP and its aims by word of mouth.

A recent first ever 'smoke-free tournament' on the island of Tanna provides a useful case. The youth committee co-opted a number of key individuals, including the local health officials and a private businessman, to promote a smoke-free event at the sports ground near the main town centre. To involve the broader community, the committee ensured the event coincided with market day. Three or four primary schools joined together on an 'NCD march' past the market through the town, with banners bearing the slogan 'Health for all and all for health!', and the children singing a 'call and answer' song about NCDs. These separate activities all served to strengthen the overall weight of event towards the PAHP's goals.

Financial incentives

Central to the effectiveness of PAHP have been two microfinance schemes - small grants and microcredit - that support ongoing initiatives designed and controlled by youths. These have become the central levers PAHP uses to alleviate the problems and resultant health effects associated with unemployment that many youth in the community face. These schemes are immensely popular as they offer a small financial incentive for young people, with their own initiative, to create something positive that benefits the community as a whole.

The running of such groups requires business-related skills and some groups have had difficulties, particularly with microcredit repayments. As a result of this quality improvement exercise, PAHP has began a process of actively involving youth in the design of this scheme to better understand their circumstances while honing such skills as money management.

Creating leaders

PAHP has placed a central focus on developing youth leaders. This focus fits culturally in Vanuatu, where communities are led by Chiefs (hereditary and elected) and/or religious leaders. In addition emphasising leadership shows the community that these young 'drop-outs' can achieve something positive with their lives, while advertising them as potential future community leaders. However, as discussed below, further consideration in relation to those less likely to attain leadership roles is required.

Positive Coordination

Analysis of the data also revealed the role of the coordinator as central to the success of the program. He commands enormous respect in the community across Vanuatu, and has deep knowledge of health and the determinants of health as they relate to life in Vanuatu. The respect he is shown and knowledge he brings means that he not only gives PAHP a solid reputation, but also that youth listen to the program's NCD messages and regard him as a role model, giving advice and support.

Discussion: Reflection through a literature lens

We believe PAHP's basic philosophy, as explicated in the above themes, fits admirably with the broader literature on community level health promotion strategies. One area in particular, 'community empowerment', stands out as of major relevance to PAHP's community initiatives. Reflecting on our findings in relation to the empowerment literature is useful in a number of ways. First it enables a deeper analysis of PAHP's successes. Second it uncovers potential areas of opportunity for PAHP, and other local organisations wishing to replicate PAHP's approach, in the future. Third it provides an insight into how the literature on community empowerment may work in practice in a resource poor context.

However, in using the relevant literature against which to critically appraise PAHP, we recognise that the measurement of health promotion requires is the need to differentiate between processes and outcomes[19]. This is particularly true for the concept of empowerment, which as a program outcome is limited by most health promotion programs' long time frames and contingent nature[23]. Furthermore, of particular relevance here is that linking empowerment to the social determinants of health at the community level is a long-term exercise, and is subject to intangibility and unpredictability[21]. Given that PAHP has only been in operation for a limited time, the main thrust of our analysis is on more immediate indicators of PAHPs 'success'.

Community empowerment

Community based health promotion strategies to address the wider determinants of health and wellbeing were given legitimacy by the Ottawa Charter health[24,25]. At the heart of these approaches is 'the empowerment of communities, their ownership and control of their own destinies'[24].

Empowerment is a multifaceted concept, operating at a number of levels; individual or psychological, organisational, and community[26].

Empowerment is a multifaceted concept, operating at a number of levels; individual or psychological, organisational, and community[26]. Community empowerment[27] has been advocated as the most comprehensive approach to addressing the social determinants of health[28]. Community empowerment encompasses individual, organisational, and community factors[29], ultimately extending to social action[30], which all challenge and transform existing power relations where one party has had 'power over' the other[25].

Recently the call has been made to analyse how community empowerment is addressed within the context of international health promotion program planning[23]. Laverack and Wallerstein propose basing this work on 'dynamic continuum' models of community development that progress in a non-linear fashion across levels of empowerment[31]. A number of authors have offered such models[25,31,32]. These begin with personal empowerment, followed by creating a sense of community through the development of small mutual support groups, community organisation and issue identification and campaigns, then participation in organisations and coalitions. These lead to collective political and social action and the gaining of control over resources, all of which ultimately are associated with improved health status.

Measuring empowerment against program attributes

PAHP's initial evaluation report[17], provides an initial awareness into the empowerment of young Ni-Vanuatu. Through this evaluation, based on 15 interviews with key stakeholders in Vanuatu, it is possible to identify empowerment through implicit process, impact and program outcome indicators[21].

Overall, it was felt that the Country Coordinator was exceptional in his networking skills, advocating for Ni-Vanuatu youth across different organisations and

communities. In addition, interviewees working with disadvantaged youth perceived he was always responsive and open to hear their requests for assistance.

All stakeholders interviewed agreed the program reach was excellent in that it did get to the most needy.

Many stakeholders commented that PAHP was directly addressing the underlying factors in the social environments of Ni-Vanuatu youth that have contributed to NCD risk factors. Stakeholders were unanimous that youth unemployment was the biggest social determinant leading to this problem, agreeing that the provision of opportunity was agreed as a very constructive approach for PAHP that differed from other health 'risk factor' focussed programs – 'We are really talking livelihood rather than lifestyle' was one perceptive comment made. For example, actively addressing unemployment as the primary social determinant of the substance abuse problem through small grants schemes was exceptionally well received compared with more conventional youth health educational approaches, and seen as positive compared with negative messages merely attacking the symptoms.

PAHP and the community development continuum

From both our initial reflective findings and the program evaluation interviews reported above, PAHP clearly empowers youth within their communities, slowly assisting them to productively challenge their situation in their communities and in society. However, we believe our reflective experience on the program, analysed against the dynamic community continuum, provides added depth to our findings. This is in line with Laverack and Wallerstein's[23] suggestion of program analysis, while also providing additional answers to the general 'how to?' question of community NCD prevention programs.

Finally, 'coalition advocacy' occurs when a joint position is taken on an issue, and 'collective actions' are initiated in a deliberate attempt to influence policy choices.

The (non-linear) continuum begins with raised consciousness concerning 'a power deficit or unattended social problem' accompanied by some individual personal development to the point where individuals are willing and able to join a group and function effectively within it[31]. For PAHP such consciousness raising is routine. Although explicitly referring to 'power' is not standard, terms like 'build yourselves up' are often used to encourage youth to look critically at their situation.

Small groups have been termed 'the locus of change' for empowering health promotion in communities[25]. This 'mutual support' counters social isolation by building and expanding family and neighbourhood networks as a part of a process toward greater control of resources[31,32]. At the same time 'Issue identification and campaigns/community organising' occurs as individuals become critically aware of how political structures affect them and their groups.

PAHP is very strong on these two areas of the continuum. 'Issue identification' typically occurs at the awareness session, with mutual support groups occurring later. These sessions make very clear where youths currently sit within Vanuatu society - including how 'drop-outs' are perceived - and how development is affecting Vanuatu. Organising mutual support groups is provided as an opportunity for them to create something positive for themselves in the light of these broader factors. Encouragingly, interviews with youths revealed that they recognised the groups were not only giving them something productive to do, but also providing them with skills they could transfer to other situations. In addition, in communities where PAHP operates, it was heartening that the communities' views of youth are reportedly slowly improving, based on the youths' involvement in enterprises that are productive for them and their communities – for example the local police have been training one group of youths to be security guards in their community. Such an increase in social capital is a potential measure of the success of PAHPs community empowerment initiatives[26].

Critical during these two stages is transference of power and control from the professional community worker to the community, to create a 'power-with' situation[25], with the worker taking a back seat role[32]. PAHP also takes this line, but on a group-by-group basis as some groups appeared to require more support than others. Unfortunately, with the increased success and growth of the program there is a concern the coordinator will be overstretched and unable to provide this support when needed.

'Participation in organisations' is recognised as the means by which people learn transferable skills and communities develop problem-solving capacity. This appeared to be occurring successfully. However, it is unclear whether those youth with least self-esteem or self-efficacy, or those in more difficult social situations, are coming forward or being invited to participate in the groups. In addition the focus on leadership development has seemed to take precedence over development of all involved. This emphasis was initially based on the assumption that skills would trickle down from leaders to the rest of the group. However, during discussions with a number of groups it became apparent this was not always the case; indeed there were a number of occasions where previous group leaders were accused of various forms of mismanagement and had been dismissed not only from their role but also from the group. As part of our quality improvement initiative, we discussed the need to assess in a culturally appropriate way whether the most isolated in the community are coming forward.

Finally, 'coalition advocacy' occurs when a joint position is taken on an issue, and 'collective actions' are initiated in a deliberate attempt to influence policy choices[25]. In terms of empowerment, 'participation in collective action is fundamental to the successful redistribution of resources, which is necessary before a community or group is said to be empowered.'[31]. PAHP is certainly working toward this goal, encouraging youth to advertise themselves, their situation

and their achievements. For example involving youths in marches through their various communities headed by banners and key messages (see picture 1) is a major step towards collective social action – although it should be noted that marches are commonplace in Vanuatu, and this program attribute may reflect what is culturally commonplace rather then a conscious move toward collective social action. However, combating powerlessness is a lengthy process[28] and full social mobilisation is less easily measured as this draws upon multiple rather than one-off interventions and requires sustained activism[21]. PAHP is currently a time-limited program, and requires ongoing, long-term funding to engage fully in this level of the continuum.

In addition, the above analysis has raised questions over the long term future sustainability of the program, bearing in mind that it is funded for a limited time, and the role of the coordinator appears currently to be paramount in the program's success. However, based on our experience, PAHP's sustainability can be enhanced through a number of policy level activities that will, in turn, impact on communities and the place of youth in Vanuatu society. Firstly, PAHP is involved in the creation of healthy public policy addressing NCDs. A future aim should be to support youth taking part meaningfully at this level[28]. At the same time, recently PAHP has moved from being a regional program to become embedded within 'In-country' Ministry of Health workplans, funded on a bi-lateral arrangement between the individual countries involved and AusAID. Once formalised, this approach has the possibility of 'embedding' long term goals related to addressing the social determinants of NCD risk factors amongst young people through a continued program of empowering activities.

Picture 1. *The road to empowerment through social action? A PAHP sponsored March in Port Vila, Vanuatu.*

Suggestions for future work

This constructivist research design provided useful initial results both for PAHP and potentially for programs implementing or planning to implement similar strategies. However some limitations require discussion.

While very useful program level data was gathered, three months is a limited time to gather data, particularly given the cultural complexities of Vanuatu. More time spent with communities would have added strength to observations of the program, particularly in light of the literature on community empowerment, which emphasises deeper knowledge of the context of life and culture within communities than a limited placement could allow[26]. Long term ethnographic work would be the most suited for shedding light on the complex cultural, historical, social, economic, and political contexts within which power and empowerment exist[29] and that are evident throughout communities in Vanuatu. However, while this approach would undoubtedly lead to deeper contextual understanding, the pragmatic feasibility of undertaking such work over the long-term is questionable.

The findings are contextually bound yet have implications for addressing social determinants of health in other resource-poor settings. Our 'a posteriori' analysis has provided an initial 'a priori' framework from which others may work. Based on our reflections and analysis, an additional step to designing a similar program would be to develop key indicators with youth involved to form the basis for ongoing quality improvement of programs (for example AusAID has recently funded a number of small grants schemes through other NGOs in Vanuatu).

In line with Raphael[19] we found focussing on empowerment provided a valuable level of depth to our analysis, particularly using the community development continuum as advocated by Laverack and Wallerstein[23]. Given this promising depth to the analysis found 'a posteriori', it would be useful for future work to formally evaluate changes and successes based on specific empowerment measures. Recently, Wallerstein[26] has provided a useful overview of empowerment strategies and outcomes, and further pathways to health that could form the basis of this work. However, given the contextually dependent nature of empowerment the development of these evaluative tools should occur through in-depth participatory work with youth themselves to ensure culturally appropriateness and appropriateness to the life experience of young people in Vanuatu.

Participatory action-research will also be an important program improvement tool for PAHP in the future, and has begun in order to strengthen the micro-credit scheme. It is an empowering participatory tool[20], and furthering this across the program as a whole will provide the youth with additional skills while indicating how PAHP is running.

Conclusion

This paper has discussed one program directly addressing the social determinants of NCDs in young people in Vanuatu. Given the importance of community based health promotion initiatives, and the relatively new recognition of NCDs in terms of their social determinants within resource poor contexts, it is becoming increasingly important to document where these two meet. This paper has shown how one program is taking action to address this link, and how appraising it against the broader and largely theoretical literature can provide a useful tool to analyse that practice more deeply. The result is a glimpse into the 'how to?' of community based NCD prevention that is lacking in the literature[3]. More often, such programs have addressed narrow risk factors for specific disease prevention. PAHP however goes further, optimising broad lifestyle and living conditions, or the 'causes of the causes', for the positive promotion of health across the board.

PAHP is making strides towards enhancing the lives of young Ni-Vanuatu, evidenced by the interest in the program by communities themselves, and by the program's growth. The paucity in the literature on formal documentation of such programs, often due to lack of time, money, and academic experience, is understandable. However, we hope this paper has provided a useful and interesting glimpse into what one program is achieving, and will galvanise future program teams to write up their activities and appraise them through the lens of the relevant literature.

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Cultural Democracy: The way forward for primary care of hard to reach New Zealanders*

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Abstract

The use of cultural democracy, the freedom to practice one's culture without fear, as a framework for primary care service provision is essential for improved health service in a multi cultural society like New Zealand. It is an effective approach to attaining health equity for all. Many successful health ventures are ethnic specific and have gone past cultural competency to the practice of cultural democracy. That is, the services are freely taking on the realities of clients without and malice from those of other ethnicities. In New Zealand the scientific health service to improve the health of a multi cultural society are available but there is a need to improve access and utilization by hard to reach New Zealanders.

This paper discusses cultural democracy and provide example of how successful health ventures that had embraced cultural democracy were implemented. It suggests that cultural democracy will provide the intellectual impetus and robust philosophy for moving from equality to equity in health service access and utilization. This paper would provide a way forward to improved primary care utilization, efficiency, effectiveness and equitable access especially for the hard to reach populations. use the realities of Pacificans in New Zealand illustrate the use of cultural democracy, and thus equity to address the "inverse care law" of New Zealand. The desire is for primary care providers to take cognizance and use cultural democracy and equity as the basis for the design and practice of primary health care for the hard to reach New Zealanders

Introduction

The access to and utilization of primary health care services is the most common denominator reflecting health disparity in New Zealand[1]. The basis may be ethnicity, socioeconomic status, social class and/or geographical distribution[2,3]. However it has been apparent for sometimes that which ever way New Zealand society is categorized, the "inverse care law" is the norm rather than the exception[4,5]. That is, regardless of the categorization, the New Zealanders who needs care most have the least access to the health care service they need to address their health wants, needs and demands. The least access is due to health care service availability, acceptability, and affordability[4].

...cultural democracy will provide the intellectual impetus and robust philosophy for moving from equality to equity in health service access and utilization.

For many years the notion of equality have underpinned health service provision[5,6,7]. Therefore the emphasis in health service development have almost exclusively focused on availability to the detriment of equitability and thus the resolution of the "inverse care law" in New Zealand[2,4,5]. For example the advent of the politically correct under 5 year old health provision have mostly increased the health service utilization among the easy to reach New Zealanders and those who needs the care most still use the services least. Therefore equal availability to all, though the politically correct equality notion, still did not adequately address the reign of the "inverse care law"[7,8,9].

In New Zealand the scientific health service to improve the health of a multi cultural society are available but there is a need to improve access and utilization by hard to reach New Zealanders[7,10] in order to resolve the shameful national health statistics. However, there is a conceptual impasse in providing a robust framework with the essential associated theoretical, contextual and intellectual support for replacing equality with the notion of equity as the matrix for health services provision in New Zealand.

This paper suggests that cultural democracy will provide the intellectual impetus and robust philosophy for moving from equality to equity in health service access and utilization.

Political democracy has been well expressed and practiced in New Zealand in its various forms but political participation and utilization of the system by minority groups have been low and ineffective. Political democracy needs cultural democracy as the over aching philosophy.

Furthermore, the government "of the people by the people for the people", assuming equality in the abilities of communities and individuals to access its mechanisms and make these work on their behalf and for their benefits, is at least questionable[11]. It is accepted that the ideal political democracy does not work quite that simply. In fact, some political commentors have stated that the media and wealth has more control over the democratic political process rather than individual or community choice[11,12].

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This paper will use the realities of Pacificans in New Zealand to illustrate the use of cultural democracy, and thus equity to address the "inverse care law" of New Zealand. The desire is for primary care providers to take cognizance and use cultural democracy and equity as the basis for the design and practice of primary health care for the hard to reach New Zealanders, usually minority groups with minimal political power living at the margin of New Zealand main stream, regardless of ethnic`ity, social class, socio economic status and geographical location.

Terms and Concepts

The discussion of primary care have been hampered by the dominant use of doctors' clinical professional language[13,14]. Given that language is also a medium for thinking, the conceptualization and communication in primary care provision have been curtailed by the lingual gymnastic and boundaries of the providers. For example the communication of health risks have often been viewed as neutral, value free and strictly scientific. However, from a socio-cultural perspective, health risks are not just objective realities but a construction mediated through social and cultural assumptions and frameworks[14].

These frameworks are addressed through cultural democracy[15]. This is a philosophical precept which recognizes that the way a person communicate, relate to others, seek support, think and learns (cognition) are a products of the value system of his/her community[16]. Further more a policy that does not recognize the individuals' and communities' rights to remain identified with culture and language of his or her group is said to be culturally undemocratic[15]. Therefore cultural democracy is the ability of the people to practice their culture and language with relative freedom without discrimination[15,16]. Cultural democracy is an alternative ideology to acculturation. It is now identified with pluralism and multiculturalism.

Therefore indigenous Pacific cultures must be viewed in New Zealand in the context of their cultural histories and Pacificans be given the rights and opportunities to study, learn and practice important elements of their culture,...

Therefore indigenous Pacific cultures must be viewed in New Zealand in the context of their cultural histories and Pacificans be given the rights and opportunities to study, learn and practice important elements of their culture, including health, health risks, and health service provision in New Zealand educational institutions and be socialized to a cultural process whereby Pacificans of all ages learn to be a member of their respective societies and communities, sharing with other culture through the ability to read the cues of each other's culture through competences in cultural and social literacy[17,18]. These has been the basis for "unity in diversity" among the Pacific nations[12,19].

Cultural democracy enable the development and acceptance of the processes for equity. The latter is the ability to allocate resources according to want, need and demands of groupings based on culture, class, socioeconomic status and location. The basis for such groupings usually reflects degrees of poverty and powerlessness. Equity purports to allocate resources to achieve a level playing field for community development and political processes. These justify the use of affirmative programs to address: population deficits leading to poverty and powerlessness; and subsequently the "inverse care law" in New Zealand. On the other hand, equality tries to address individuals and communities as if they have equal access to wealth and power. This fallacy gives rise to the uneven playing field. The hard to reach population of New Zealand, e.g. Pacific communities and other minority groups are characterized with low health service utilization rates and lower health status[1,5,6] with more linguistic disadvantages than the main stream New Zealand of predominantly Pakeha origin. Cultural differences, language, and poor education contribute to the inability to negotiate the New Zealand primary health care system and their marginal access to political power.

The philosophy of cultural democracy is consistent with New Zealand Health Primary Health Care Strategy launched in 200120, This strategy: has the following:

1. **It explicitly states that: the priority objectives to reduce inequalities includes:**

- Ensure accessible and appropriate services for people from lower socio-economic groups
- Ensure accessible and appropriate services for Maori
- Ensure accessible and appropriate services for Pacific Peoples;

2. **Its service delivery priority Areas are as follows:**

- Public health
- Primary health care
- Reducing waiting times for public hospital elective services
- Improving responsiveness of mental health services
- Accessible and appropriate services for people living in rural areas

3. **Its principles includes:**

- Acknowledging the special relationship between Maori and the Crown under the Treaty of Waitangi
- Good health and wellbeing for all New Zealanders throughout their lives
- An improvement in health status of those currently disadvantaged
- Collaborative health promotion and disease and injury prevention by all sectors
- Timely and equitable access for all New Zealanders to a comprehensive range of health and disability services, regardless of ability to pay
- A high performing system in which people have confidence
- Active involvement of consumers and communities at all levels.

4. The population health objectives includes:

- Reduce smoking
- Improve nutrition
- Increase the level of physical activity
- Reduce the rates of suicide and suicide attempts
- Minimize harm caused by alcohol, illicit and other drug use to both individuals and the community
- Reduce the incidence and impact of cancer
- Reduce the incidence and impact of cardiovascular disease
- Reduce the incidence and impact of diabetes
- Improve oral health
- Reduce violence in interpersonal relationships, families, schools and communities
- Improve the health status of people with severe mental illness
- Ensure access to appropriate child health care services including well child and family health care, and immunization

These have been the basis for Health reform in New Zealand[20,21]. the continued reforms over the last decade have been intended to underpin the implementation of the Strategy and the work of Primary Health Organizations (PHOs) and Independent Practitioners association (IPAs) to deliver primary care[21]. The intentions of the reform were to:

- Increase choice and access for all New Zealanders in a health care system that was effective, fair and affordable
- Encourage efficiency, flexibility and innovation in health care delivery
- Increase accountability to purchasers
- Reduce hospital waiting times
- Enhance the working environment for health professionals.

The Pacificans of New Zealand

The Pacific communities in New Zealand have all the characteristics of a hard to reach population[22]. They are scattered throughout the electorates of New Zealand in small ethnic-based and heterogeneous communities with at least 20 languages and from a variety of nationalities. Pacificans are disadvantaged economically with poor health status and indicator with higher morbidity, mortality and health risk but low health service utilization (the "inverse care law"). Pacificans have become an "entrenched under class" in New Zealand with increased marginalization, discrimination, both socially and economically[23]. (See Table 1 for determinants of health, health outcomes, health service utilization and socioeconomic status). The Pacific population have been characterized with a trend of worsening socio economic status, increasing powerlessness and poor health status and lower health service utilization since the beginning of mass migrations in the 1940s[24,25]. Similarly the solution has been evident however the discourses and response have been framed in an assimilation and culturally undemocratic approach. Various reports since 1940 to the modern days have articulated the plights of Pacificians in New Zealand but there has been a sparcity of political will and actions beyond the rhetoric to address the "inverse care law" and thus the marginal populations[24]. Even when health and socio economic disparity were evident in the early 1990s1, there was no: consensual political will to use cultural democracy as a basis for equitable resource allocation; and the main stream populations erroneously by insisteted that all New Zealanders are equal in needs, wants and demands and all are on a level playing field; and therefore should be given equal allocations of the national treasures.

The Pacificans have similar experiences and may well ask the same questions about the way of: delivering cervical screening; and access to medication, primary secondary, and tertiary care.

It must be emphasized that the existing health and socio economic disparities is a product of how New Zealand policies and ways of doing things (the national psyche) to date have failed to address the uneven playing field and the "inverse care law" due to inequity. Many of the reports on Pacificans have been sanitized so that their plight has been seen as a consequence of Pacific lifestyle, culture, including obligatory customary reciprocation, remittance to the Pacific island, and church and religious donations[26]. This means that all manners of social investment and building of social capital[27] were arrogantly deemed to be detrimental and contributory to the Pacificans' demise in New Zealand, a very culturally undemocratic view.

There has been negliable discourse on the context of power equality; institutional discrimination; (racism)[28,29] and culturally undemocratic ways of thinking and doing business in New Zealand as the fundamental reasons for the state of Pacificans and other minority groups. A recent publication on Maori health[28] suggests that the tangata when a shares similar issues with Pacificans for the similar reasons even though the Treaty of Waitangi is supposed to be used as a guide document for Maori health and development. This publication claims that the current state of Maori health and health services is a product of 3 important reasons. They are, in no particular order:

- "The New Zealand health systems are racist": This claim stems from the assumption that the major causes of death and low life expectancy are because Maori "choose to smoke, they choose to be fat and they are lazy". However, there is more than one way to view and reduce premature mortality from heart attacks, lung cancer, and type 2 diabetes, chronic obstructive pulmonary disease (emphysema), and stroke. These causes of mortality account for 44% of Maori deaths in 2000. "Why does the Crown require Maori to do it in this particular way and deny them access to other ways they

would prefer"? "For Maori there are many examples of racism in the health system. Some are nasty example at an individual level".

The Pacificans have similar experiences and may well ask the same questions about the way of: delivering cervical screening; and access to medication, primary secondary, and tertiary care.

- "The Maori workforce is dominated by house niggers". This claims that a house nigger" can be recognized by the way she or he has been institutionalized as a Pakeha". The house niggers "have qualifications. They have competencies. Yet they choose to further their own nests and those of friends and families, while remaining in favour with the white master".

Among Pacificans are similar individuals especially the young, building a career through greasing their way up the system and hope to help Pacificans when they become the ultimate boss. This they call working smart rather then working hard. This phenomenon have been called the "Pone Syndrome"[29]. This has been derived from the "fag system" of the old English boarding schools where senior students adopt junior students, who helps them with menial tasks in exchange for the senior students' mentorship and protection. This phenomena of Pacific gate keeping was espoused and discussed without resolution in a 1997 Pacific Health Conference[30].

- "The Providerism of the Crown" "The effect of providerism is that established Maori providers never have incentives to become competent providers … a huge advantage to the Crown of its providerism is it effectiveness as a 'divide and rule' tool".

The Crown obviously "favours certain Maori providers because they are kiwi-based or because they are friendly with the Crown".

Similar situations have been observed among Pacificans. As the Chief Executive Officer of the Tongan Health Society, we on the advise of the Pacificans from the Health Funding Authority, submitted a proposal for a church-based parish nurse primary health care service. After submission there was minimal dialogue to no communication and later a similar service was funded to a different Pacific provider related to the Crown employees involved. Fortunately this have not generated the usual animated debates which can be very divisive and detrimental to the collective Pacific efforts.

In the early days of establishing the Tongan Health Society as an ethnic specific health provider I was told that such is a notion is a racist approach to which I quickly retorted, "For more than 150 years Pakeha only have exclusively provided primary medical care to Pacificans, and now Tongans providing medical care to all New Zealanders is racist?" Again, fortunately negotiations proceeded and now the Tongan Health Society is a symbol of ethnic specific self determination in New Zealand and an example of cultural democracy in action 31

Table 1. Summary of Indicators for Pacificans in New Zealand

'Key' indicators have been highlighted in the summary table. The criteria used to select these indicators were:

- High impact
- Modifiable
- High inequality
- Good data quality

(Note: ASR = rate standardized for age by the direct method, using the WHO world population as the standard).

Source: Pacific Health Chart Book-2004[25]

Indicator	Pacificans	Total NZ Population
	Persons	Persons
Health Outcomes		
Whole of Life		
Health expectancy (ILE), 2000-2002, years	62.5	66.1
Life expectancy at birth, 2001, years	74.1	78.7
Avoidable mortality, 1996-2000, ASR per 100,000	604(581-628)	397(394-399)
Ambulatory sensitive hospitalizations, 1998-2002, ASR per 100,000	4655 (4608-4704)	2856 (2848-2864)
SF-36 Mental health scale mean scores, 2002/03	81.9 (80.3-83.4)	82.9 (82.5-83.4)
Injury mortality, 1996-2000, ASR per 100,000	24 (21-29)	26 (25-27)
Injury hospitalization, 1996-2000, ASR per 100,000	2744 (2706-2782)	2393 (2386-2400)
Causes of infant mortality, rate per 1000 live births		
• Prematurity complications	1.3 (0.9-1.7)	0.8 (0.7-0.9)
• Birth complications	0.3 (0.1-0.5)	0.4 (0.4-0.5)
• SIDS	0.7 (0.4-1.0)	0.9 (0.8-1.1)
• Birth defects	0.6 (0.4-0.9)	0.4 (0.4-0.5)
Hearing failure at school entry, 2001/02, percent	18.1 (16.7-19.5)	8.4 (8.1-8.7)
Asthma hospitalizations, ASR per 100,000 children	748 (719-777)	491 (485-498)

(cont. on next page)

Indicator	Pacificans	Total NZ Population
	Persons	Persons
Health Outcomes		
Causes of infant mortality, rate per 1000 live births		
Meningococcal disease notifications, ASR per 100,000 children	21.8	8.6
0-14 years – infants and children		
Infant mortality, 1997-2001, rate per 1000 live births	7.1 (6.2-8.0)	5.1 (4.8-5.3)
Rheumatic fever notifications, ASR per 100,000 children	7.0	1.4
Tuberculosis notifications, ASR per 100,000 children	6.1	1.0
15-24 years – young people		
Lower respiratory tract infection hospitalizations, ASR per 100,000 children	1523 (1483-1564)	590 (583-598)
Pregnancies 2002, rate per 1000 females (10-19 years)	65	37
Births 2002, rate per 1000 females (10-19 years)	41	19
Sexually transmitted infections, all types, 1999-2002, rate per 100 young people attending sexual health clinics	23.7	14.8
15-24 years – young people		
Suicide mortality, 1996-2000, rate per 100,000 young people	21 (15-29)	24 (22-26)
Road traffic injury hospitalization, 1998-2002, rate per 100,000 young people	260 (236-285)	407 (399-415)
Cardiovascular disease mortality, 45-64 years, 1996-2000, per 100,000 middle-aged adults	390 (353-428)	176 (172-180)
Cardiovascular disease mortality, 65+ years, 1996-2000, rate per 100,000 older people	2617	1980 (1962-1998)
Ischaemic heart disease mortality, 45-64 years, 1996-2000, rate per 100,000 middle-aged adults	217 (190-246)	115 (112-119)
Ischaemic heart disease mortality, 1996-2000 65+ years, , rate per 100,000 older people	1165 (1041-1301)	1103 (1089-1116)
Stroke mortality, 45-64 years, 1996-2000, rate per 100,000 middle-aged adults	71 (56-89)	26 (25-28)
Stroke mortality, 65+ years, 1996-2000, rate per 100,000 older people	783 (680-899)	477 (469-486)
Self-reported diabetes, 15+ years, 2002/03, ASR per 100 persons (15+ years)	10.1 (7.0-13.2)	4.1 (3.6-4.6)
Vitrectomy in adults, 25+ years, ASR per 100,000	54 (46-61)	9 (8-9)
Lower limb amputation in adults, 25+ years, ASR per 100,000	44 (37-50)	17 (17-18)
Renal failure in adults, 25+ years, ASR per 100,000	60 (52-68)	13 (13-14)
25+ years – adults		
Lung cancer mortality, 1996-2000, 65+ years, rate per 100,000 older people	725	488
Colorectal cancer registrations, 1996-2000, 65+ years, rate per 100,000 older people	279	746
Breast cancer mortality, 1996-2000, 65+ years, rate per 100,000 older women	136	123
Prostate cancer registrations, 1996-2000, 65+ years, rate per 100,000 older men	1272	1603
Prostate cancer mortality, 1996-2000, 65+ years, rate per 100,000 older men	463	267
Chronic obstructive pulmonary disease (COPD) mortality, 1996-2000, rate per 100,000 adults	82 (70-96)	50 (48-51)
Chronic obstructive pulmonary disease (COPD) hospitalization, 1998-2002, ASR per 100,000 adults	629 (599-661)	269 (266-272)

(cont. on next page)

Indicator	Pacificans	Total NZ Population
	Persons	Persons
Health Service Utilization		
Primary care services		
Have usual carer, 2002/03, ASR per 100 adults	95.2 (93.1-97.3)	93.0 (92.1-93.9)
Saw doctor last year, 2002/03, ASR per 100 adults	79.6 (75.3-84.0)	80.8 (79.7-81.9)
GP visits, 2002/03, number, age-standardized mean per adult	3.6 (3.1-4.1)	3.2 (3.1-3.3)
Saw dentist last year, 2002/03, ASR per 100 adults	20.6 (16.3-24.9)	41.0 (39.5-42.4)
Saw Pacific worker in the past year, 2002/03, ASR per 100 adults	9.7 (6.3-13.2)	0.5 (0.4-0.7)
Attended private A&E or after hours clinic, 2002/03, ASR per 100 adults	10.7 (7.6-13.9)	13.9 (12.8-25.2)
Saw complementary provider in the past year, 2002/03, ASR per 100 adult	12.0 (8.6-15.5)	24.0 (22.8-25.2)
Saw Pacific healer in the past year, 2002/03 ASR per 100 adults	3.2 (1.2-5.2)	0.3 (0-0.3)
Reasons for most recent primary care visit, 2002/03, ASR per adults:		
• Chronic disease or disability	18.3 (13.3-23.2)	19.3 (18.1-20.4)
• Short-term illness	40.5 (34.8-46.1)	35.3 (34.2-36.7)
• Clinical preventive service use	7.5 (4.6-10.3)	12.7 (11.7-13.8)
Uptake of cervical screening, 2002, percent	49	73
Uptake of breast screening, 2002, percent	42	63
Opportunistic screening in primary health care setting, 2002/03, ASR per 100 adults		
• Blood pressure test	56.1 (19.8-62.4)	50.0 (48.6-51.5)
• Diabetes test	30.4 (24.4-36.3)	16.8 (15.7-17.9)
• Discussed smoking	3.6 (2.1-5.2)	8.1 (7.4-8.8)
Needed to but did not see GP, 2002/03, ASR per 100 adults	17.9 (13.6-22.2)	12.7 (11.5-13.9)
Reasons for not seeing GP despite perceived need, 2002/03, ASR per 100 adults		
• High cost	54.2 (40.6-67.9)	49.3 (44.6-54.1)
Reasons for not collecting prescription, 2002/03, ASR per 100 adults		
• Cost too much	50.5 (36.1-64.9)	27.0 (23.7-30.2)
Acc claims		
Visits that were ACC related, 2002/03, ASR per 100 adults	6.7 (3.8-9.5)	9.6 (8.6-10.5)
ACC claims, 2003, rate per 100,000	300	660
Ongoing serious injury ACC claims, 2003, rate per 100,000	44	70
Secondary care services		
Saw medical specialist, 2002/03, ASR per 100 adults	20.2 (16.5-24.0)	30.4 (29.3-31.5)
Proportion of people who saw medical specialist in private rooms, 2002/03, ASR per 100 adults	46.3 (32.7-59.9)	44.9 (42.3-47.6
Attended hospital emergency department 2002/03, ASR per 100 adults	4.9 (3.1-6.8)	7.8 (7.0-8.6)
Attended hospital outpatients, 2002/03, ASR per 100 adults	5.9 (4.0-7.9)	10.7 (9.8-11.7)
Attended hospital inpatients (including day patients) 2002/03, ASR per 100 adults	14.9 (11.2-26.4)	11.3 (10.5-12.1)
Pacific medical admissions, 2002/03, percent of expected (standard discharge ratio)	116	100
Pacific surgical admissions, 2002/03, percent of expected (standard discharge ratio)	90	100
• Community outpatient care	141	290
• Forensic	8	5

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Indicator	Pacificans	Total NZ Population
	Persons	Persons
Risk Factors		
Physical activity		
Physically active children (5-17 years), 1997-2000, percent	52 (43-61)	68 (66-70)
Physically active adults (18+ years), 1997-2000 percent	63 (57-69)	68 (67-69
Consumption of at least three servings of vegetables per day, children (5-14 years), 2002, rate per 100 children	61	57
Consumption of at least two servings of fruit per day children (5-14 years), 2002 rate per 100 children	50	43
Physical activity		
Consumption of at least three servings of vegetables per day, adults (15+ years), 2002/03, ASR per 100 adults	41.1 (35.1-47.0	67.3 (65.6-69.1)
Consumption of at least two servings of fruit per day, adults (15+ years), 2002/03, ASR per 100 adults	55.6 (50.2-61.0)	53.9 (52.4-55.3)
• Only sometimes	47.9	20.1
Full breastfeeding at 3 months, percent, 2002/03	50.1	55.2
Overweight children (5-14 years), 2002, rate per 100 children	33	
Obese children (5-14 years), 2002, rate per 100 children	24	10
Overweight adults (15+ years), 2002/03, ASR per 100 adults	39.2 (34.3-44.1)	34.0 (32.6-35.3)
Obese adults (15+ years), 2002/03, ASR per 100 children	43.0 (37.7-48.3)	20.1 (19.0-21.2)
Tobacco smoking (15+ years), 2002, rate per 100	31.9	25.8
Hazardous drinking, adults (15+ years), 2002/03, ASR per 100	18.6 (13.7-23.5)	18.9 (17.6-20.3)
Socioeconomic determinants of Health		
Neightbourhood deprivation		
Proportion of population living in10% of most deprived areas (NZ Dept 01 Decile 10), 2001 , percent	42	10
Education		
Participation in early childhood education, 0-4 years, 2001, percent	33	63
Participation in tertiary education, 18-24 years, 2001, percent	15	32
Proportion of adults (18+ years) with no formal qualification, 2001, percent	36	28
Employment		
Labour force participation, 2004, percent	62	67
Unemployment 2004, percent	7.9	4.6
Occupation and industry		
Proportion of labour force by occupation and industry, 2001, percent of labour force		
• Legislators, administrators and managers	5.4	13.3
• Professionals	7.9	14.7
• Technicians and associate professionals	9.1	11.7
• Clerks	16.4	13.3
• Agriculture and fisheries workers	3.3	8.4
• Trades workers	8.5	8.9
• Plant and machine operators and assemblers	18.9	8.8
• Elementary occupations	13.9	6.2
Income		
Real median annual income (15+years), 2001, dollars	$14,600	$18,600

(cont. on next page)

Indicator	Pacificans	Total NZ Population
	Persons	Persons
Socioeconomic determinants of Health		
Housing		
Proportion of people owning (with or without mortgage the dwelling in which they usually live, 2001, percent	26	55
Proportion of people renting the dwelling in which they usually live, 2001, percent	59	29
Proportion of people living in dwellings with more than two occupants per bedroom, 2001, percent	20.9	3.3
Family structure		
Proportion of people living in extended families, 2001, percent	29.4	8.3
Proportion of parents with dependent children who were sole parents, 2001, percent	21.9	17.3
Acculturation and discrimination		
Proportion of Pacific people born in NZ able to speak languages, 2001 percent:		
• Pacific language(s)	28	?
Proportion of Pacific people born overseas able to speak languages, 2001 percent:		
• English	81	98
Proportion of people acknowledging belonging to a religion, 2001, percent	80	60

The Pacific response to the "Inverse Care Law"

In the late 1980s the growing concern over the status of Pacificans in New Zealand provided the impetus for major policy initiative and radical change of the infrastructure of the health system[31]. This gave rise to Pacific ethnic specific health services and PHOs, emphasizing the establishment of a network of Pacific health services, especially in Auckland, recognizing the different needs of Pacificans[31] and thus the importance of cultural democracy using Pacific specific approaches to thinking and doing business. Pacific advisory groups emerged at all levels of government and the Ministry of Pacific Island Affairs was established and strengthened. Much of these developments were driven by Pacificans impatient with the sluggishness of the bureaucracy[31] and taking charge of their own destinies through self determination[26] and self-help community development models[31].

Cultural democracy pervades the provision of Pacific primary health services with very remarkable results. The examples includes the prominent participation in the hepatitis B Screening programme[33]; meningococcal B meningitis vaccine trial[35], control of Pacific cot death[36]; establishment of Pacific ethnic specific services[31], and the establishment of translation and Pacific social support services[26].

The Pacifican response may be categorized into the following efforts:

- Ethnic specific health services development[31]. These have been Pacifican controlled community-based services employing Pacific health professionals and incorporating the Pacific values (see Table 2) and ways of doing things;
- Human Resources and capacity development. Pacificans took control of the policy development[35], training of health professional from community health workers[37], SIDS community educators[38], to clinicians and health administrators and managers; and
- Building of a Pacific body of knowledge through increased capacity and participation in health research and efforts to improve professional writing publication[40], and research translation[39].

It is time that the impact of the Pacific responses be evaluated. The process indicators e.g. utilization, service acceptability and affordability have been profound. However, the effect on outcomes of health, powerlessness, productivity and socioeconomic status, are still forthcoming.

Discussions

The discourses on Pacific health have used cultural democracy as the framework for analysis. Although the linking to cultural democracy have been a hindsight, the precepts of community-based services dealing with the particular needs and values of Pacificans have been the focus from inception. These of course are fundamental components of cultural democracy which favours particularism over universalism (one model fits all)[42]. Particularism addresses the need to address ethnic specific needs as more efficient than the looking for one model to fit all and the achievement of the economy of scale.

What is needed to use cultural democracy is the will for equity. This is more crucial than the often widely held view that lack of resources makes particularism, and thus cultural democracy, untenable. If a power structure perspective is used to examine and explore the underlying causes of poverty and insecurity that is keeping the system discriminatory, it

will show that empowerment will contribute significantly to health, productivity and socioeconomic status. This and the many schools of thoughts concerning poverty and powerlessness have been discussed in relation to the Pacific children[41].

There is a complex interaction between political traditions, policies and systematic patterns in population health over time. A recent study supports the hypothesis the political ideologies of government affect indicator of population health[43]. The policies aimed at reducing social inequalities seem to have a salutary effect on selected health indicators, infant mortality, and life expectancy at birth.

There is a need for affirmative action to address inequity; cultural democracy; and to achieve a level playing field for all New Zealanders. This process should not be seen as deprivation of some for the benefit of others less deserving. It is essential to understand that poverty and unequal power distribution will ultimately threaten the security of New Zealand. Therefore, the use of equity and affirmative programs plus a demonstrable respect for each other will address the needs of the poor and maintain the health and harmony of New Zealand.

Table 2. Comparison of Pacific and Pakeha core values

Pakeha	Pacific
• Individual rights and freedom	• Cooperation
• Independence	• Consensus
• Justice – equality and access	• Respect
• Privacy	• Generosity
• Competition	• Loyalty
• Consumerism	• Sharing
• Scientific-rational	• Humility
• Emphasis on individual well-being	• Reconciliation
	• Fulfillment of mutual obligations
	• Reciprocity
	• Emphasis on relationships

Source: A Taufehulungaki (2004) Rising Pacific waves: approaches to inform change. Presentation at Pasifika Spirit Conference 2004, ALAC, New Zealand.

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Building the Capacity of Fijian Communities to Improve Health Outcomes

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Abstract
The purpose of this paper is to describe the experiences of building capacity toward improved health outcomes in a rural Fijian community. The paper defines the concept of community capacity situating this within the context of health programming. The tension that exists between the two key forms of health programming, top-down and bottom-up, is also discussed in terms of its resolution through the approach of 'parallel-tracking'. A practical means of visually representing the concept of community capacity is given using the spider-web configuration. The paper will be of interest to the planners and evaluators of health programmes that aim to build and measure community capacity.

Introduction

Community capacity is seen by many authors[1,2] as a process that increases the assets and attributes that a community is able to draw upon. It is 'an increase in community groups' abilities to define, assess, analyze and act on health (or any other) concerns of importance to their members'[3].

Community capacity is not an inherent property of a particular locality, nor of the individuals or groups within it, but of the interactions between both. It is also a function of the resource opportunities or constraints (economic, political and environmental) of the conditions in which people and groups live[4].

This paper addresses the issue of why some Fijian communities are more capable at accessing resources, at influencing decision makers, are better organised and are better able at mobilizing themselves to address their health concerns and needs. What are the key characteristics of these communities that make them better organised, both socially and structurally? How can they, and other Fijian communities, be systematically developed to build their capacity?

Community capacity is not an inherent property of a particular locality, nor of the individuals or groups within it, but of the interactions between both.

Unpacking Community Capacity

One of the advances in recent years around our thinking of community capacity has been the ability to 'unpack' this concept into the areas of influence that significantly contribute to its development as a process. In particular the 'capacity domains' are the organisational influences of community capacity. They provide a link between the interpersonal elements (individual control, social capital and community cohesiveness) and the contextual elements (the political, socio-cultural and economic circumstances) of a community[5]. The 'capacity domains' allow communities to better organise and mobilize themselves toward gaining control of their lives. The 'capacity domains' are robust and collectively capture the essential qualities of a 'capable community'. They were developed in Fiji as part of a research project[6] and have been cross-checked against the literature to ensure their validity[7]. The community capacity domains are (a brief description of each is provided in table 1):

1. Stakeholder participation;
2. Problem assessment capacities;
3. Strong local leadership;
4. Empowering organisational structures;
5. Ability for resource mobilization;
6. Strong links to other organisations and people;
7. Stakeholder ability to 'ask why';
8. Stakeholder control over programme management;
9. An equitable relationship with outside agents.

The nine 'capacity domains' can be used in a programme context to build community capacity, to improve health outcomes and to increase sustainability. This is achieved through a learning and evaluation tool. First, I discuss the nature of health programming and how this can also influence community capacity.

Parallel-Tracking and Community Capacity

In practice, health programmes are most commonly implemented as activities set within the context of an intervention or a project (collectively referred to in this paper as the 'programme'). This is conventionally managed and monitored by, for example, a health practitioner and commonly includes: a period of identification; design; appraisal; approval; implementation; management and evaluation.

The way in which health concerns are to be addressed and are defined in a programme can take two distinct forms: 'top-down' and 'bottom-up'. 'Top-down' describes programmes where problem identification comes from those in 'top structures' who have decision making authority in the system 'down' to the community. 'Bottom-up' is the reverse, where the community identifies its own problems and communicates these to those who have the decision making authority.

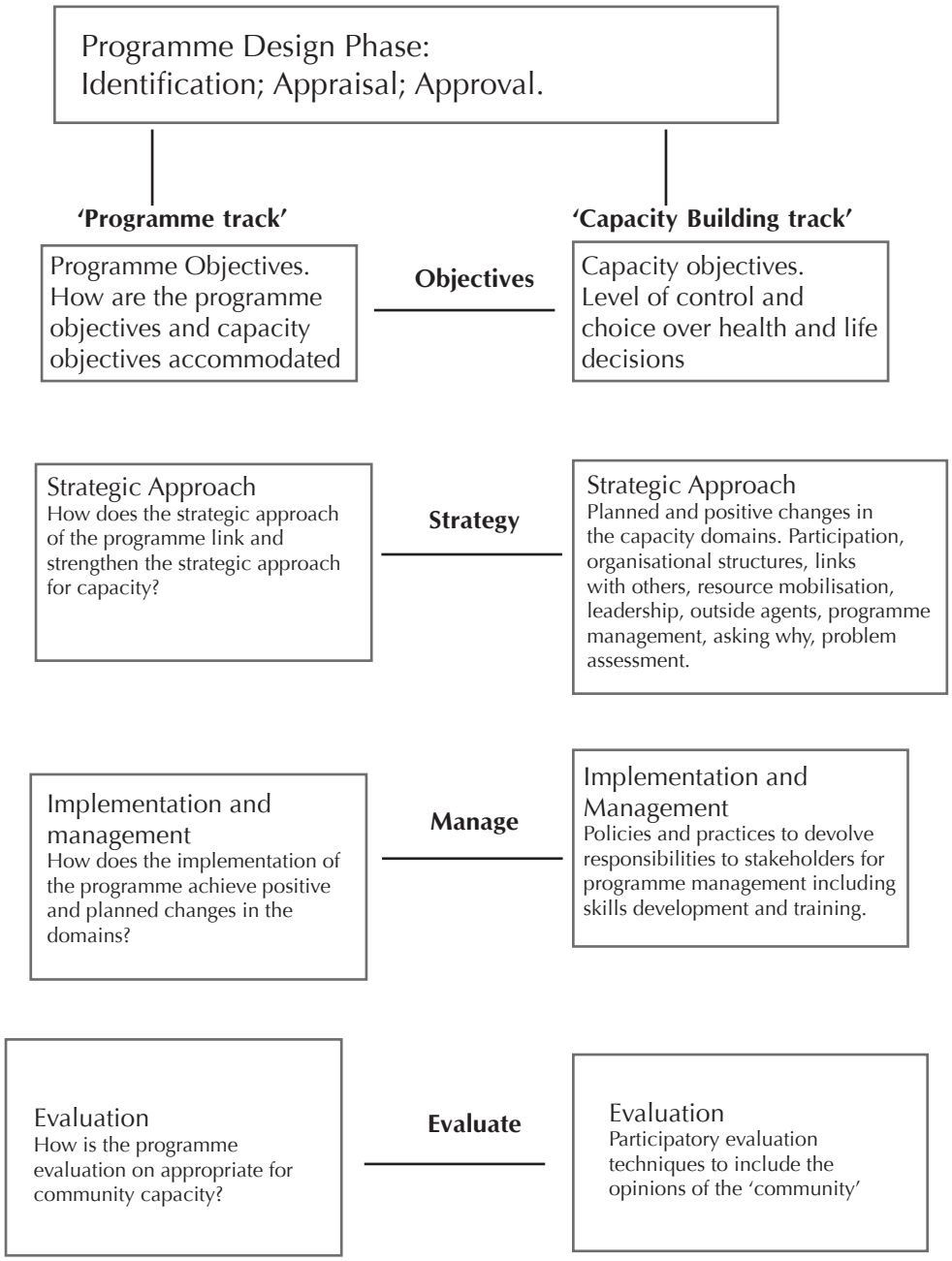
Table 1. A description of the 'capacity domains'.

Domain	Description
Participation	Participation is basic to community capacity. Only by participating in small groups or larger organisations can individual community members better define, analyse and act on issues of general concern to the broader community.
Leadership	Participation and leadership are closely connected. Leadership requires a strong participant base just as participation requires the direction and structure of strong leadership. Both play an important role in the development of small groups and community organisations.
Organisational structures	Organisational structures in a community include small groups such as committees, church and youth groups. These are the organisational elements which represent the ways in which people come together in order to socialize and to address their concerns and problems. The existence of and the level at which these organisations function is crucial to community capacity.
Problem assessment	Capacity presumes that the identification of problems, solutions to the problems and actions to resolve the problems are carried out by the community. This process assists communities to develop a sense of self-determination and capacity.
Resource mobilisation	The ability of the community to mobilize resources both from within and the ability to negotiate resources from beyond itself.
'Asking why'	The ability of the community to critically assess the social, political, economic and other causes of inequalities is a crucial stage towards developing appropriate personal and social change strategies.
Links with others	Links with people and organisations, including partnerships, coalitions and voluntary alliances between the community and others, can assist the community in addressing its issues.
Role of the outside agents	In a programme context outside agents are often an important link between communities and external resources. Their role is especially important near the beginning of a new programme, when the process of building new community momentum may be triggered and nurtured. The outside agent increasingly transforms power relationships between him/herself, outside agencies and the community, such that the community assumes increasing programme authority.
Programme management	Programme management that empowers the community includes the control by the primary stakeholders over decisions on planning, implementation, evaluation, finances, administration, reporting and conflict resolution. The first step toward programme management by the community is to have clearly defined roles, responsibilities and line management of all the stakeholders.

The two types of programming are often viewed as having different agendas that create a bottom-up versus top-down 'tension'. Top-down programmes would include almost all health education and multi-risk factor reduction interventions such as lifestyle and behaviour change. These are the predominant styles of health programming. Bottom-up programmes are fewer in design and often exist as a part of larger scale top-down programming.

Top-down programmes are conventionally managed by an outside agent, for example, the health practitioner. The community are seen as the intended beneficiaries and are expected to cooperate and contribute to the programme under the instruction of the programme management. Bottom-up approaches consciously involve the community in the management of the programme through skills training and by increasingly devolving responsibility for activities such as planning, report writing, budgeting and evaluation. The challenge to health practitioners is how to accommodate community capacity building (bottom-up) approaches within predominant top-down programming. This requires a fundamental shift in the way practitioners think about health programming. Rather than viewing the issue as a bottom-up versus top-down 'tension' the process of accommodating community capacity can be better viewed as a 'parallel track' running along side the main 'programme track' (see Figure 1).

Figure 1. Parallel-Tracking Capacity Building



The tensions between the two styles of programming then occur at each stage of the programme cycle making their resolution much easier to achieve in a practical setting. Theoretically, this helps to move our thinking on from a simple bottom-up/top-down dichotomy. Practically, this provides a systematic way in which to acc ommodate the two styles of programming. Parallel-tracking places an equal emphasis on both the bottom-up and top-down health objectives. The main purpose of the health programme remains the same but now has a clearly defined role for building community capacity. A separate set of concerns for community capacity run 'parallel' to those of specific programme objectives, strategic approach, implementation and evaluation.

Discussion

A Learning and Evaluation Tool to Build Community Capacity in Fijian Communities

I next describe a learning and evaluation tool (referred to as 'the tool') that used the nine domains developed in Fijian communities to build capacity in health programming8.

The Community Context

The 'tool' was implemented in three tikinas (Naloto, Bemana and Nasikawa) on the main island of Viti Levu between July 1997 and August 1998. Fijian villages provide a geographical boundary for the community and these are grouped into districts (tikina), the districts into provinces, the provinces into administrative divisions. The tikina typically represents three or four communities who share the same

needs and interests, geographical boundaries and have social and economic links. The Naloto Tikina Health Committee (THC) covers three rural communities and typically holds a meeting every quarter to discuss common concerns. The village of Naivicula is situated in the Naloto tikina and has a population of between 250 and 400 people. Access to Naivicula is via a narrow road approximately forty five minutes drive from the nearest town of Korovu. The village is situated in an agricultural area close to a river and farming is the main occupation of its residents. Rural Fijian life has well defined social structures and this is organised around traditional patterns and customs. The village consists of a number of extended families which form a clan, headed by a clan chief, several clans form a tribe also headed by a chief.

How was the tool implemented?

The basic question planners and practitioners need to ask themselves is: How has the programme helped to increase community capacity in each of the nine 'domains'? To address this question the tool uses four phases: 1. preparation; 2. assessment; 3. strategic planning; and 4. visual representation. This is implemented as a participatory workshop over 1 or 2 days.

In the village of Naivicula the workshop was held in the community hall and once all the participants had assembled the customary ceremony of sevusevu was completed. This involves introductory speeches by the guests and senior members of the community and the acceptance and drinking of kava. The workshop was conducted in Fijian and facilitated by a trained Fijian translator. During the workshop the summary of each activity was drawn onto a large sheet of paper and displayed at the front of the community hall to record progress. A typed summary would be later sent to the Chairperson of the Naloto THC and used as a means of further planning and evaluation.

Phase 1: Preparation prior to the implementation of the tool

A period of observation and discussion prior to the assessment of community capacity is important to adapt the tool to the social and cultural requirements of the participants. For example, the use of a working definition of community capacity can provide all participants with a more mutual understanding of the programme objectives. A simple qualitative methodology that has been used in Fiji to develop a working definition is provided elsewhere9.

Phase 2: An assessment of each domain

Using the nine domains the participants firstly make an assessment of their community's capacity. To do this they are provided with five generic statements for each domain, each written on a separate sheet. The five statements represent a description of a range of levels of capacity for that domain. The statements that were developed in Fiji are provided elsewhere10 and Figure 2 gives an example for 'Problem assessment'.

Taking one domain at a time the participants are asked to select the statement which most closely describes the present situation in their community. The statements are not numbered or marked in any way and each is read out loud by the participants to encourage group discussion. The descriptions may be amended by the participants or a new description may be provided to describe the situation for a particular domain. In this way the participants make their own assessment for each domain by comparing their experiences and opinions.

Figure 2. Statements for the domain 'problem assessment'

NA I TIKOTIKO E SEGA KINA NA KILA KEI NA VAKAVAKARAU ME QARAVI KINA NA VAKADIDIKE Community lacks skills and awareness to carry out an assessment.
E SEGA NI VAKADIKEVI NA LEQA E NA VEI TIKOTIKO No problem assessment undertaken by the community.
NA I TIKOTIKO E TIKO KINA NA KILA. NA LEQA KEI NA I TUVATUVA NI KA ME VAKAYACORI KA RA VAKARAITAKA MAI NA LEWE NI I TIKOTIKO. E SEGA NI RA VAKAITAVI KINA NA I SOQOSOQO LALAI ESO E NA I TIKOTIKO. Community has skills. Problems and priorities identified by the community. Did not involve participation of all sectors of the community.
NA LEQA , NAVEIKA E SA VAKAYACORI, KEI NA KEDRA I WALI E SA VAKATAKILAI MAI E NA I TIKOTIKO. E VAKYACORI NA VAKADIDIKE ME VAKAQAQACOTAKI KINA NA I TUVATUVA NI I TIKOTIKO. Community identified problems, solutions and actions. Assessment used to strengthen community planning
ME TOSO TIKO GA NA KENA VAKAQARAI NA LEQA, NA KENA I WALI KEI NA VEIKA E SA VAKAYACORI ENA I TIKOTIKO. Community continues to identify and is the owner of problems, solutions and actions.

2.1. Recording the reasons for the assessment

It is important that the participants record the reasons why the assessment for the domain has been made. First, it assists other people who make the re-assessment and who need to take the previous record into account. Second, it provides some defensible or empirically observable criteria for the selection. The 'reasons why' include verifiable examples of the actual experiences of the participants taken from their community to illustrate in more detail the reasoning behind the selection of the statement.

Phase 3: Developing a strategic plan for community capacity

The assessment in Phase 2 is in itself insufficient to build capacity as this information must also be transformed into actions. This is achieved by the promotion of community capacity through strategic planning for positive changes in each of the nine 'domains'. The strategic planning for each domain consists of three simple

steps: a discussion on how to improve the present situation; the development of a strategy to improve upon the present situation; and the identification of any necessary resources.

3.1. A discussion on how to improve the present situation

Following the assessment of each domain the participants will be asked to decide as a group how this situation can be improved in their community. If more than one statement has been selected the participants should consider how to improve each situation. The purpose is to identify the broader approaches that will improve the present situation and provide a lead into a more detailed strategy. If the participants decide that the present situation does not require any improvement, no strategy will be developed for that particular domain.

3.2. Developing a strategy to improve the present situation

The participants are next asked to consider how, in practice, the present assessment can be improved. The participants develop a more detailed strategy based on the broader approaches that have already been identified by: Identifying specific activities; Sequencing activities into the correct order to make an improvement; Setting a realistic time frame including any significant benchmarks or targets; and assigning individual responsibilities to complete each activity within the programme time frame.

3.3. Assessing the necessary resources

The participants assess the internal and external resources that are necessary and available to improve the present situation, for example, technical assistance, equipment, land, finance and training. This includes a review of locally available resources and any resources provided by an outside agent.

Table 2 provides a summary of a completed assessment and strategy for the domain 'problem assessment', taken from the Naivicula community. The table shows the ability of the participants to produce rational and workable strategies and to be honest in addressing the strengths and weaknesses of their community.

Phase 4: Visual Representation and Interpretation

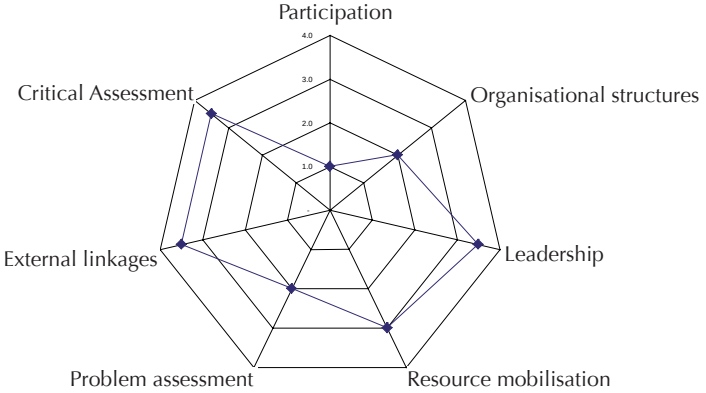
The visualization of community capacity presents an attractive option to health practitioners who want to make a representation of the analysis, over a specific time frame, and in a way that can be understood by all the stakeholders. As discussed in Phase 2, a set of statements are identified for each domain and these are ranked from 1 (weak) to 5 (strong). The qualitative evaluation of each domain then provides a set of numerical rankings which can be plotted, in this case onto a spider web configuration. Different stakeholders in the same programme use the interpretation of this visual representation to make comparisons of the domains at different times in the life of the programme.

Table 2. Baseline assessment and strategy for 'problem assessment' in Naivicula community

Domain	Baseline Assessment		Development of the Strategy		
	Baseline Assessment	Reasons why Selected	How to improve	Implementation	Resources
Problem assessment Vakadikevi ni leqa	Community lacks the necessary skills and awareness to carry out its own problem assessment.	History of petty theft in community History of conflict within village groups and unable to reach consensus.	Improve leadership skills. The delegation of tasks to every able bodied man in the community.	Training programme for leaders. Regular meetings by Tikina council. Regular visits to meetings by leaders to discuss issues raised.	Training support from outside agent. Funds or transportation for leaders to reach community.

The spider web configuration (see figure 3) illustrates how this method provides a quick picture of the strengths and weaknesses within the Naivicula community (defined by the nine domains) in a way that can be visually communicated.

Figure 3. Spider graph for Naivicuula community



Building Capacity in the Naivicula Community

The spider graph for the Naivicula community in figure 3 illustrates a range of strengths and weaknesses in capacity at that particular time[11]. Participation, given a ranking of 1.0, was identified as being weak because of the failure of local leaders to communicate information to other members of the community. Traditional protocol maintains that the approval of the village chief must be sought before holding a community meeting. Individuals may be reluctant to defer to the chief or to ask for a particular favour, such as organising a meeting, if he/she lacks respect for the chief or if he/she is not on good terms with the chief at the time. In the community this situation had led to a reduction in the number of village meetings and in a poor level of participation in decision making between its members.

Interestingly, the interpretation of the spider web gives 'leadership' a ranking of 3.5. A Fijian chief is always accorded the outward signs of respect. Even though a person may gain prominence, respect and authority within the community because of his/her personal qualities or through the acquisition of wealth, he/she would have to defer to the chief on matters of tradition and culture. Local leaders are rarely challenged and community members can be influenced by traditional views. In these circumstances it is important that the participants engage in a 'facilitated dialogue' by the evaluator to reach a consensus on the selection of each domain that represents the actual situation in their community.

To build their capacity the community members decided to firstly gain the approval of the village chief to meet on a regular basis and on predetermined dates. This overcame the difficulty of having to follow traditional protocol to obtain approval for every meeting but maintained respect for local customs in their community. Problem assessment was also identified as being weak with a ranking of 2.0. Following the assessment the Tikina Health Committee requested that a Fijian Non-Government Organisation organise skills training for community leaders. The 'tool' had engaged the community members in a process of logical thinking and critical assessment. This allowed them to identify the areas of influence (the domains) that required strengthening. In turn, this helped to improve the efficiency of the delivery of resources to areas that were felt to have the greatest need, by the community. Re-evaluation and strategic planning is carried out every 3-6 months and in this way the capacity of the community is strengthened, usually with the assistance of an outside agency. Gradually, the community members take more control of issues that were important to them and this becomes an empowering experience.

Conclusions

The purpose of this paper is to offer an approach that is workable to build the capacity of Fijian communities to address a range of health and other issues. The 'tool' for building and evaluating community capacity is designed to allow people to scrutinise the achievements that they, often in partnership with an outside agency in a programme context, have identified as being important. This enables the community to clearly define the roles and responsibilities for objective setting, strategic planning, management and evaluation. This is set within the context of top-down health programming in which community capacity is accommodated through the concept of 'parallel-tracking'.

The 'tool' enables people to participate, to better organise themselves and to critically reflect on their individual and collective circumstances. For example, being able to demonstrate success in building community capacity provides a mechanism through which communities can produce proposals to justify their access to further funds. More importantly, it enables people to strategically plan for actions to resolve their circumstances, to evaluate and to visually represent this process as outcomes that are conducive to a health programming context.

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The concept of health promotion in Fiji

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ABSTRACT

Introduction

This paper sets out to describe stakeholders' views of the concept of health promotion in Fiji.

Metholodology

Sixty-one semi-structured qualitative interviews were carried out with participants from all levels of the health sector (National, Divisional, Sub-Divisional and zonal) as well as community members and other sectors that had an involvement in health promotion. Data collected was analysed using grounded theory following the process outlined by Strauss and Corbin.

Results

Participants described a concept of health promotion in Fiji that provides a sophisticated and effective framework for action to improve health. The immediate implication of this paper is that participants view the processes and structures for health promotion in Fiji as currently insufficient to fully implement the concept of health promotion articulated. In particular, the call for health promotion to be at the center of development is not matched by the action required at a regional and national level, the building of staff and community capacity is often ineffective in its current sporadic and intermittent form and the reorientation of the health sector has been hampered by the perception of the health sector as service providers rather than facilitators.

Conclusion

To fully implement the concept of health promotion in Fiji, more attention needs to be given to the processes and structures that direct and support health promotion action. Specifically, there is a need to develop implementation strategies that provide required and timely inputs during the development and ongoing implementation of health promotion activity. This can be achieved by engaging relevant sectors, investing sufficient time and resources into building staff and community capacity and better defining responsibilities.

Introduction

The Ottawa Charter for Health Promotion[1] and more recently, the Bangkok Charter for Health Promotion in a globalised world[2] have established accepted principles and strategies for health promotion action. These charters have set the context for the current understanding of the concept of health promotion internationally. Experience with the implementation of the activities identified in these charters has led to the development of strong evidence that health promotion is effective in delivering health outcomes when undertaken with the required scope, intensity and duration. In particular, it is accepted that to be effective health promotion requires a range of strategies, capacity within both communities and organisations, a high degree of local participation and control in priority setting and implementation and technical support for research and development[3].

The majority of evidence of health promotion effectiveness has been established in developed countries with well established health sectors. However, there remain questions as to the processes and structures required in developing countries.

Coordinated action to improve health in the Western Pacific in the 1980s and early 1990s was undertaken using primary health care and health education models. While informed by evidence and charters that were developed internationally, the need to tailor health activities to the needs of the pacific region led to the development of New Horizons in Health[4]. This document was the basis for a series of declarations and commitments within the pacific region that commenced with the Yanuca Island Declaration in 1995[5]. These declarations and commitments endorsed an 'ecological model of health promotion'[6] that highlighted the linkages between health and the environment as well the importance of culture and tradition to well-being. Through the Yanuca Island Declaration and subsequent commitments and agreements the concept of Healthy Islands evolved. Healthy Islands shifted activities to improve health away from the traditional health education and primary health care models towards an approach that focussed on empowering communities. It also led to the recognition that improving health required collaborative and participatory approaches that could not be achieved within existing organizational structures.

While this evolution was taking place, the principles and strategies of health promotion were introduced through two donor funded initiatives, the Kadavu Rural Health Project[7] and the Fiji Trilateral Health Promotion Project[7]. These projects built the capacity of staff and institutions in Fiji to implement health promotion activities. The parallel evolution of the Healthy Islands concept and the introduction of the principles and strategies of health promotion led to a merging of the two strands of activity and the development of a 'concept of health promotion' specific to Fiji.

This paper forms the first stage of a broader program of research on health promotion in Fiji. Specifically, the paper sets out to describe stakeholders' views on the concept of health promotion in Fiji. At a time where health promotion is on the verge of a new phase of evolution in Fiji, the purpose of this first report is to provide an opportunity to reflect and build on existing knowledge of the concept of health promotion in Fiji, the factors that have influenced its development and to identify implications for the effectiveness and sustainability of health promotion activities within Fiji.

Methodology

Background

The study was developed to describe the experience and behaviours of individuals, communities and organisations who have had roles in the development and implementation of health promotion activities at different levels in Fiji (National, Divisional, Sub-Divisional and local as well as Provincial and District). The qualitative research approach allows an exploration of how participants interpret and interact and it generates 'knowledge of social events and processes by understanding what they mean to people'[8]. As such qualitative research allows the researcher to explore the knowledge, understandings and perspectives of study participants in relation to the concept of health promotion in Fiji.

Sampling

A theoretical sampling strategy with the following elements was used in this study:

(a) Purposeful selections of study participants who were best able to inform the research purpose. Participants from government, non-government, community and traditional sectors that met one or more of the following criteria were selected:
- involvement in a public health issue
- formal responsibility for a health promotion activity
- informal responsibility for a health promotion activity

(b) Ongoing analysis and participant selection was used to determine on analytical grounds what additional data was required to be collected. The combination of purposeful selection with ongoing selection allowed a sample of cases to be planned in advance and subsequently an extension of sampling of individuals who were able to inform the emerging concepts.

(c) The researcher identified instances where the content of data collected differed substantially from emerging concepts and could not be incorporated into the existing analysis. These negative cases were used as a basis for further selection of participants and a trigger for the researcher to re-examine the existing data to develop concepts that encompass the negative cases.

(d) The extent of theoretical sampling was guided by the ability of each additional participant to provide theoretical insights into the study issue. Sampling was complete when 'theoretical saturation' was reached. That is, when additional cases failed to provide further insights.

Interviews

During the first phase of data collection from August 2005 to June 2006, 61 semi-structured interviews were conducted (see Table 1). The interviews covered a broad range of issues relating to health promotion in Fiji as part of a broad program of research. Relevant to this paper were questions related to the concept of health promotion in Fiji, the outcomes of health promotion action, the processes and structures that have supported the development and implementation of health promotion activities and the outcomes and benefits of health promotion activities. An interview guide was used to provide a systematic approach for each interview and facilitate the collection of comprehensive data. The interview guide approach was combined with the techniques of informal conversational interview. In this technique the researcher allows questions to 'emerge from the immediate context' of the interview process[8].

Table 1. Study Participants

Participants	First Phase
Environmental Health Officers	11
Nursing/Medical Staff	18
Non-government Organisations/other sectors	16
Ministry of Health/National Centre for Health Promotion Sectors	10
Research sector	6
Total	**61**

Analysis

The QSR Nivo 2.0 computer package was used to manage and analyse data collected using grounded theory following the process outlined by Strauss and Corbin[9]. This approach involves systematically gathering and analysing data throughout the research process to discover concepts and relationships. All interviews, coding and analysis was conducted by the first author. Meanings and interpretations of the data were established through continual reflection and discussion with key informants.

Results

Concept of health promotion

Health Promotion at the centre of development

Participants regarded the concept of health promotion as a potential antidote to many of the issues confronting contemporary Fijians, particularly with regard to enabling people to take control of their lives and work proactively to improve their health and well-being. There was a strong view that the concept of health promotion is about reawakening traditional beliefs within Indigenous Fijians as well as working with Indian Fijians and minority groups to enable them to control and improve their own health.

Participants in the study recognized that enabling people to make decisions affecting their health required participation. Participation in health promotion activities was seen as

the key method of building the knowledge and skills of individuals and encouraging their commitment to health activities.

The focus on participation was seen as a deliberate attempt to shift community thinking away from dependence on government towards a more proactive engagement with health issues. Participants felt that the concept of health promotion involved an optimistic and positive view of the present and the future. This positive attitude towards health issues was viewed as a deliberate shift away from the focus on the negative consequences of specific behaviours and lifestyles that was the dominant approach prior to the introduction of the Healthy Islands approach in 1995.

Participants also emphasized the need to shift the responsibility for implementation to communities to facilitate development, self-reliance and empowerment. To support sustainability and commitment, participants identified the importance of mobilization of resources at the community level to promote health. The recipe for health promotion put forward by the health sector encourages communities to examine their latent or underutilized resources. The focus is on utilizing existing resources effectively rather than seeking resources from government.

To support sustainability and commitment, participants identified the importance of mobilization of resources at the community level to promote health.

Development of knowledge and skills

Participants identified the development of knowledge and skills both within the health sector and communities as a key component of the concept of health promotion in Fiji. The focus is on transferring knowledge and skills so that individuals and communities develop the capacity for planning, implementation and monitoring of health promotion activities.

This was described as requiring training and capacity building activities that explore the meanings and perceptions of health with communities. The aim is to transfer knowledge and skills that enable communities to act on issues as they arise. Participants indicated that this represented a shift from the didactic unidirectional approach of health education to a partnership approach where the community develops the knowledge and skills to undertake planning and implementation.

Reorientation of the health system

Participants also indicated that the concept of health promotion involved a reorientation of the health system. Participants described the need to shift the interface between the Ministry of Health and the community from a service delivery model to a model that combines service delivery with respect to curative services and facilitation and mobilization with respect to health promotion. It was acknowledged that the reorientation of the health sector required staff with new skills sets as well as an understanding and recognition within communities about the nature of the new relationship with the health sector.

Participants also expressed the importance of reorientating the health sector to better facilitate intersectoral action. There was a realization that issues impacting on the health and well-being of the population are often beyond the scope of responsibility and the financial limitations of the health sector. To address the issues that impact on health intersectoral collaboration is necessary. Frontline staff were particularly vocal about the need to work with other sectors to promote health.

Development of the concept of health promotion

External Drivers

Externally driven programs and activities were viewed as heavily influencing the concept of health promotion in Fiji. The concept of Healthy Islands was established through a series of regional meetings that commenced with the World Health Organisation sponsored Yanuca Island Declaration in 1995[5]. Participants felt that this Declaration and subsequent commitments disproportionately focused on the importance of the physical environment as a key factor in health and well-being. This focus led to Environmental Health Officers being assigned control over the implementation of strategies arising from the Healthy Islands concept. Around the same time, the processes and strategies of health promotion were introduced to Fiji as part of two donor funded programs, the Kadavu Rural Health Project and the Trilateral Health Promotion Project. Both 'Healthy Islands' and 'health promotion' were seen by participants as new paradigms introduced to replace existing primary health care and health education models.

Participants indicated that the simultaneous introduction of the closely related but different concept of Healthy Islands and processes and strategies for health promotion created some confusion and tension among staff within the health sector over the framework for improving the health of the Fijian population. This confusion hampered progress in implementation and in establishing a broader platform for activity that engaged all sectors of the health system.

Participants described a process where the Healthy Islands concept and the processes of health promotion were eventually merged under the banner of the concept of health promotion.

Environmental health sector

The environmental health sector was seen to strongly associate itself with the concept of Healthy Islands. Participants indicated that the commitment of the environmental health sector to the Healthy Islands concept and led to a concept of health promotion that focused extensively on the settings approach of health villages and healthy communities. It is at this local level that activities to empower communities, build knowledge and skills and reorientate the health sector were being undertaken by Environmental Health Officers.

Due to their dominance of health promotion, staff within the health sector saw environmental health officers as the deliverers of health promotion. The demarcation of responsibilities within the health system was seen

to perpetuate this perception by placing all formal responsibilities within the key action areas of Environmental Health Officers.

National Centre for Health Promotion

The National Centre for Health Promotion (NCHP) was seen as the group responsible for the overall direction of health promotion activity in Fiji. Although most implementation activities are undertaken by Environmental Health Officers, health promotion expertise and advocacy activities are recognized as the domain of the NCHP. They are viewed as both the owners of the health promotion concept and the holders of health promotion knowledge. As with other parts of the health promotion effort in Fiji, the NCHP is dominated by staff from with backgrounds in environmental health.

Participants indicated that the NCHP has found it increasingly difficult to control and direct the health promotion effort in Fiji due to its small staffing numbers and the geographical distances between health sub-divisions. There is a recognition that for the concept of health promotion to be effective the NCHP need to broaden the involvement of other specialties within the health sector.

Ministry of Health

Participants indicated that the Ministry of Health has attempted to frame the concept of health promotion through strategic plans and mission statements that outline priority areas for action. Formal documentation within the Ministry of Health point to health promotion as one of the key pillars of activity within the health sector. While this creates a context and framework for health promotion action, participants expressed a view that there was a substantial difference between the rhetoric of the Ministry of Health and activities actually undertaken. Participants indicated that the dominance of the environmental health sector continues to skew health promotion activities towards environmental health issues and limits the activities relating to other priority health issues specified in key Ministry of Health documentation including non-communicable diseases, mental health and injury.

The pigeon-holing of health promotion into an environmental health function presents a significant barrier to broader sectoral approaches to promote health.

Implications of the current concept of health promotion
Pigeon-holing of health promotion into environmental health

Participants indicated that the strong linkage between the concept of health promotion and the environmental health sector has been a stumbling block to embedding health promotion into the responsibilities of a wider pool of staff within the health sector. In particular, as a result of the prominent role of the environmental health sector, health promotion activities have disproportionately focused on environmental health issues, specifically sanitation and water supply. The pigeon-holing of health promotion into an environmental health function presents a significant barrier to broader sectoral approaches to promote health. This has limited the ability of the health sector to extend from local actions to broader intersectoral and policy activities. Participants reported that it has also created the unintended difficulty of other members of the health sector viewing health promotion as outside of their responsibilities and therefore not requiring their contribution. There is a recognition within the health sector that for health promotion to extend beyond environmental health there needs to be a substantial and prolonged engagement with a wider range of staff within the health system regarding their role in health promotion action. Staff within the health sector remain unclear about their roles and contribution to health promotion activities. Needs analysis and planning approaches are viewed as lacking flexibility and insufficient in their consideration of issues outside of environmental health. This perception creates an obstacle to the development of health promotion activity that has the required scope and reach to deliver effective outcomes.

Demarcation of responsibilities

Participants reported that one of the purposes of facilitating participation is to transfer the responsibility for health promotion activities to the community. This is a common theme reported across the health sector that has its roots in trying to empower communities to be proactive and address their own needs and move them away from a dependence on government. However, the enthusiasm to ensure the involvement and participation of community members in health promotion has led to the perception that 'people are responsible for their own health'. Participants indicated that his approach shifts accountability and responsibility for health promotion activities away from the health sector towards community members. It also makes it possible for staff to assign difficulties associated with implementation of particular programs to a lack of capacity or understanding within the community.

Where implementation efforts are unsuccessful communities are seen to be 'delaying and not cooperating because they didn't grasp the concept'. The response to the failure of health promotion activities in local settings is mixed. Some health sector staff are mystified by the lack of uptake in the community 'we have tried to get across…that health is not just the Ministry of Health's business it's everyone's business'. Others recognised that the shift in responsibility to communities has happened too quickly for many communities who lack the confidence and capacity to undertake health promotion activities independently of the health sector. There is also a growing perception that the transfer in responsibility to communities has not been supported adequately by processes and structures for monitoring and support. Communities that have been able to take on responsibility have had long-standing support that is readily available and proactive at critical times. It was recognized that communities require prolonged engagement with the concept of health promotion and genuine opportunities to build the necessary knowledge and skills. Participants indicated that without continued impetus provided by the health sector, activities 'fizzle out'. Effective

interaction is focused on facilitation and mobilisation skills. To transfer responsibility for activities before the community has had the opportunity to develop sufficient capacity and understanding was identified as a significant risk to effective implementation.

Health sector skills and capacities

The shift away from health education and direct service provision towards partnership and facilitation has created tension within the health sector over the new skill sets and knowledge required to be an effective facilitator and empower communities to exert control over their own health. Participants indicated that this new role sees some health staff who lack the confidence and skills to perform in a facilitation role subsequently handover all responsibility to communities. This is compounded by the limited access in regional areas to health promotion expertise and advice. It was indicated that formal communication is slow and often ineffective leading to a fragmented system where staff have different conceptions of the role of a facilitator for health promotion.

Participants described opportunities for the development of health promotion skills and capacities as limited. Training and implementation are often combined. In many cases staff within the health sector are learning the concepts of health promotion as they are given the responsibility for planning, implementation and monitoring. This often leads to staff feeling overwhelmed and overburdened. The elements of the concept of health promotion that involve enabling staff and community through development of appropriate skills and experience are not adequately realized.

Unsupported, health promotion 'fizzles out' in local settings. There is a gradual reduction in the quantity and frequency of activity until it ceases completely.

Engagement with health promotion within the health sector

The enthusiasm for the concept of health promotion varies substantially across the health sector. Participants with a long-standing involvement and engagement with health promotion and strong linkages with the National Centre for Health Promotion indicated a strong commitment to health promotion. Staff that were isolated from the National Centre for Health Promotion, had limited opportunities for interaction and discussion of health promotion and limited experience with the concept showed a very low level of interest. The National Centre for Health Promotion plays a strong advocacy role in supporting the development of a commitment to health promotion among staff within the health sector.

A further factor impacting on the enthusiasm of staff was their traditionally perceived roles. Environmental Health Officers have been traditionally responsible for protecting the community from health risks. To shift the role of Environmental Health Officers to a new partnership approach where the knowledge, attitudes and decisions of the community hold substantial power and influence was seen by some as a challenge to their authority. Participants that had limited opportunities to develop capacity for health promotion were more comfortable reverting back to their traditional roles rather than focusing on mobilizing communities and building capacity. Health promotion is seen by some environmental health officers as a new approach that is at the periphery of their work. The core of their activities is seen to be protecting the community from health risks.

Counteracting the lack of engagement with the concept of health promotion was group pressure for action applied by staff within the health system. Where advocacy for health promotion from the National Centre for Health Promotion had been effective and engaged a broad spectrum of staff across a specific regional area a strong base of support for health promotion was established. Environmental Health Officers and other responsible staff were then given a new context for action as now there performance in health promotion was being judged directly by their peers.

Intersectoral action

The statement that 'health is not the Ministry's business it is everybody's business' is frequently cited by health sector staff at all levels to indicate the importance of working together for health outcomes. However, this view is not widespread outside of the health sector. Where staff from other sectors recognize the importance of their involvement in health, this involvement is often disrupted by the priorities of their own sector and the performance measures to which they are held accountable. Although the health sector places health promotion at the centre of development in Fiji, other sectors are not yet willing to do so.

Participants outside of the health sector indicated that the terminology of the concept of health promotion is laden with health specific concepts and perspectives while acknowledging the important links between health and other sectors. It was felt that communication of the concepts of health promotion needed to be reorientated to a discussion that emphasised the higher order social and economic objectives and removed any health bias. The effect of this shift in presentation of the concept of health promotion is to move responsibility away from the health sector and create a context for shared responsibility for a range of social and economic objectives that are at the core of Fijian development.

Cyclical nature

Unsupported, health promotion 'fizzles out' in local settings. There is a gradual reduction in the quantity and frequency of activity until it ceases completely. Participants described a cycle of health promotion activities whereby there was often widespread enthusiasm and support for the concept of health promotion following training and capacity building activities. However, this initial enthusiasm slowly drained away when support was not continued and sustained at key times. There was a view that this was in part caused by the externally motivated and directed nature of the

concept of health promotion. Local staff and community members are given limited opportunities to internalize and own the concept of health promotion during training and development opportunities. A similar situation was expressed by participants even in the prolonged engagement associated with donor funded projects including in the Kadavu Rural Health Project and the Taveuni Rural and Community Health Project where participants indicated that local staff and communities were driven externally and as a result health promotion activities were significantly reduced in the absence of these external drivers.

Participants indicated that follow-up and support at key times during the cycle of health promotion activity was required to sustain implementation and ensure ongoing activities to promote health. This follow-up and support was only likely to occur when the concept of health promotion was embedded in the work of locally based staff both through formal recognition and performance measures as well as the informal expectations of both staff within the health sector and community members. These informal responsibilities were especially important in geographically remote areas with limited communication networks and linkages with other parts of the health sector.

Discussion

Participants described a concept of health promotion in Fiji that provides a sophisticated and effective framework for action to improve health. The immediate implication of this paper is that participants view the processes and structures for health promotion in Fiji as currently insufficient to fully implement the concept of health promotion articulated. In particular, the call for health promotion to be at the center of development is not matched by the action required at a regional and national level, the building of staff and community capacity is often ineffective in its current sporadic and intermittent form and the reorientation of the health sector has been hampered by the perception of the health sector as service providers rather than facilitators. Participants indicated that these difficulties can be traced to several factors including, the over reliance on the environmental health sector to direct and implement health promotion activities, the lack of confidence of staff to act as facilitators and the limited capacity of communities to plan and undertake health promotion activities independently.

This study has several methodological limitations. Firstly, it was not possible for an independent coder to analyse the data collected. Instead, frequent meetings were held with key informants to test emergent understandings and interpretations arising from the data. Secondly, interviews with participants were retrospective and conducted only once for most participants. Health promotion is the subject of extensive activity and reforms in Fiji and the concept of health promotion along with implications for action are constantly evolving. The study would benefit from examining the changes to the concept of health promotion over time to better elicit the trends in its evolution in Fiji. Thirdly, the English language was used in all interviews. None of the participants indicated any difficulties in being interviewed in English, however, for some it was a second or third language. The use of a Fijian interviewer would benefit future research.

Conclusion

To fully implement the concept of health promotion in Fiji, more attention needs to be given to the processes and structures that direct and support health promotion action.

Specifically, there is a need to develop strategies that provide required inputs during the implementation of health promotion activity by engaging relevant sectors, investing sufficient time and resources into building staff and community planning and implementation capacity and better defining organisational responsibilities.

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A proposed future for the care, treatment and rehabilitation of mentally ill people in Fiji.

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Abstract

Admission to Fiji's sole psychiatric hospital St Giles attaches the stigma of mental illness to patients, which may impact on the course of their lives and on their social acceptability. We argue that alternatives to hospitalization are health promoting in that they avoid stigmatization and institutional dependency. Recommendations are proposed for the further development of a community-based mental health service, such that admission is avoided where possible and where services are provided in the least restrictive environment close to patient's family and community supports.

Introduction

Admission to a psychiatric hospital is a major life event in any society. In addition to the ravages of the disorder, many patients experience the social consequences of isolation, family rejection and the 'stigma' of mental illness. In Fiji that stigma is synonymous with the name of the mental hospital, St Giles. To 'go to St Giles' or to have 'been in St Giles' are commonly heard remarks across Fiji, so much so as to raise the concern that a single admission may adversely impact on one's position in the general community for a lifetime. Stigma is defined as 'a mark of disgrace' (Macquarie Dictionary). Accordingly, the provision of alternatives to admission should become an important service priority that may be considered both protective of adverse social outcomes and health promoting through strategies of social inclusion.

The Fiji Ministry of Health's mission is to provide quality health services for the people of Fiji with a vision towards an integrated and decentralized health system to foster good health and well-being[1]. It acknowledges the right of every citizen of the Republic of Fiji, irrespective of race, sex, color, creed or socioeconomic status, to have access to a national health system that provides high quality health services. The attachment of social stigma through the use of one of the Ministry's services is an issue of service quality and sensitive provision as much as it is of community perceptions.

'There is no development without health and no health without mental health.'

Health is the state of complete physical, mental and social well-being and not merely the absence of disease or infirmity[2]. Mental health is a state of successful performance of mental function, resulting in productive activities, fulfilling relationships with other people, and the ability to adapt to change and to cope with adversity. It is poignant that few people appreciate the fact that mental health is the matrix on which all of health is built. Many do not understand that a healthy body finds its sanctuary in the serenity of a healthy mind. Therefore, it is impossible to achieve a true state of health when the mind is not in a state of equilibrium and peace. Mental health is indispensable to personal well-being, family and interpersonal relationships, and contribution to community or society.

Recently, disability due to psychiatric disorder or illness has received increasing attention since the Global Burden of Disease (GBD) report launched jointly by the World Health Organization, World Bank and Harvard University[3]. It has shown that mental disorders are responsible for 11% of GBD in the world and Major Depression alone is the fourth contributor to GBD at present and will be the second highest contributor by the year 2020. The World Health Report (WHO 2001) made the clear, emphatic statement that 'mental health, which has been neglected for far too long, is crucial to the over-all well-being of individuals, societies and countries and must be universally regarded in a new light'[4].

In the Pacific Islands Ministers of Health meeting in Tonga in March 2003, mental health was included on the agenda for the first time[5]. Health Ministers from the Pacific and other parts of the Western Pacific Region have forged an alliance with the WHO through the Ministerial Round Table on Mental Health at the 52nd session of the Regional Committee for the Western Pacific and at the Ministerial Round Table at the 54th World Health Assembly[6]. The commonly held opinion was: 'There is no development without health and no health without mental health.'

The Health Ministers unanimously agreed to feature mental health on their national health agendas and to consider the huge burden of mental health problems as a priority for national action.

Background

In 2000, the population of Fiji was estimated to be approximately 854,796, concentrated on the two largest islands, Viti Levu and Vanua Levu[7]. The nation's capital city of Suva is located on Viti Levu and is the location of the St Giles Hospital. With a 190-bed capacity, St Giles is where most mental health services are organized, coordinated and delivered.

Historically, the development of mental health services in Fiji from the late 1800s has been reaction-based rather than anticipatory or proactive. St. Giles Hospital, then named the Lunatic Asylum, was founded in 1884 mainly for expatriates. The care of the mentally ill was relegated to lay persons called wardens who, in turn, were supervised by a Board of Visitors. The Board of Visitors scrutinized committal orders and determined who should be discharged. The Attorney General, The Chief Medical Officer and a prominent member of society comprised the Board.

In the 1960s a psychiatrist was appointed as full-time medical superintendent. Wilson (1965) reviewed psychiatric admission statistics by "race" (Fijian, Indian, and "other") over the period 1941-1962 and found that the admission rate for Indians was about twice that for Fijians, and the rate for "others" (Europeans, Chinese, Rotumans, etc.) was higher still[8]. In an unwittingly amusing statement typical of the times, Wilson argued that the greater "Europeanisation" of the Indians made them more likely to be admitted for psychiatric treatment; and that Fijians were still being taken care of at the "tribal level". In the 1970s, services expanded to include forensic assessment and an outpatient's clinic. By the 1980s, a multidisciplinary approach was adopted and occupational therapy for inpatients was started. Community Psychiatric Nursing commenced in 1994 and included a Day Care Center.

New legislation on mental health should consider elements for prevention, mental health promotion, early diagnosis, treatment and rehabilitation and other mental health concerns such as:...

With regard to the care and treatment of mentally ill people in Fiji, the functions and responsibilities of the Fiji Ministry of Health are defined by the Mental Treatment Act, Chapter 113, (28th February 1940, Ed. 1978)[9]. It is 'an act to amend and consolidate the law relating to persons of unsound mind and to provide for the reception and detention of such persons in mental hospitals.' The Act empowers the Minister of Health to establish mental hospitals for such persons; St. Giles being the only hospital in Fiji established for this purpose.

But the Mental Treatment Act does not address patients' rehabilitation and reintegration into the community. Since it was a proclaimed, significant developments and advances in neuroscience have changed the approach to and management of mental illness. These changed approaches have not yet been adopted in Fiji. New legislation on mental health should consider elements for prevention, mental health promotion, early diagnosis, treatment and rehabilitation and other mental health concerns such as: issues relating to human rights and responsibilities; the welfare of vulnerable groups (women, children, elderly, and people with disabilities); natural disaster responses; the mental health consequences of HIV infection and AIDS; and the effects of the use of the newly emerging psychoactive 'recreational' drugs.

Current Services.

Most of the available mental health professionals in Fiji are based at the St Giles Hospital. They provide a wide range of services that are, largely, hospital-based, biologically oriented and symptom-focused. These include: Adult In-Patient Care; Out-Patient Care; Occupational Therapy; a Day Care Center; Liaison Psychiatry to support other medical practitioners; and Forensic Psychiatry. Outpatient consultations are provided on Mondays for adults, children and adolescents at Suva's major general hospital, the Colonial War Memorial Hospital (CWMH). The Community Psychiatric Nursing (CPN) team is also based at St. Giles Hospital and provides psychiatric nursing care only to the greater Suva area. Access to St Giles and its centralized services is therefore difficult for people living beyond the greater Suva area. Rural communities in the Northern and Western Divisions and in the smaller, distant islands suffer from an absence of mental health diagnostic and treatment services. The wide geographic spread of the population, land, terrain and waters make equal access to services an impossible ideal while services remain centralized and while budgets remain attached to hospitals.

Domiciliary Services are provided to attempt to address this problem. Discharged patients are referred for follow-up to doctors and zone nurses within their localities, but none of these have specialist psychiatric training. There are no certificate trained psychiatric nurses in Fiji although moves have been taken recently to re-introduce a course at Fiji School of Nursing. In an effort to ensure that patients do not run out of medication, individual packs of medications are sent from the St. Giles Hospital pharmacy to Zone Nurses and given to the patients during reviews. Although there are some reported delays in the delivery of medications to certain areas, this is still considered an effective means to encourage adherence to medication regimens, although high readmission rates (anecdotally 70% p.a.) suggest otherwise.

Although the ill effects of long term confinement in a mental hospital (institutional dependency) and the advantages of community based mental health services have been widely recognized, there is still much to be done in providing community based mental health services. Delayed treatment contributes to chronicity and negative prognoses. The principles of providing services in the least restrictive environment or close to family support are not yet guiding service developments. Currently there are no designated psychiatric beds in divisional or sub-divisional hospitals and the capacity does not yet exist in the Divisions to diagnose, contain and treat patients with primary psychiatric disorders, some of whom may present a danger to themselves or to others. The difficulties such patients present to medical

officers, nurses and to other patients results in rapid referrals to St Giles Hospital. Sub-Divisional Medical Officers have already identified and expressed the need for additional training for themselves and other health workers.

Unfortunately there are no baseline studies on the epidemiology of mental disorders in Fiji. In particular, there is a need to describe and analyse the past and current utilization of St Giles in order to identify the types of patients for whom alternative treatment options will need to be developed. A preliminary study on first admission was conducted by Seru-Puamau in 2005 focusing on the 143 first admissions for year 2002 (10) with the view to identifying characteristics that suggest that patients may have benefited from a community based service, thereby avoiding the stigma of a psychiatric admission. The findings of relevance to this discussion were that the average length of stay of first admissions was 65 days and that 15% of patients did not have a major (psychotic or affective) psychiatric disorder. Bridgman (1997) had found a major cause of male first admission of Pacific Islanders to psychiatric hospital in New Zealand was for involvement with drugs and/or alcohol[11]. Following the exclusion of 24 patients who stayed over 75 days, the mean length of stay in St Giles for the remainder was 23 days – a significant amount of time to be out of the community – but similar to the average length of stay of 25 days for first admissions to the Macquarie Hospital in Northern Sydney, a long term facility similar to St Giles [12].

The rationale for liberating the mentally ill from institutional care cannot be challenged, but the alternatives to hospitalization need to be adequately resourced.

Integration as an Overarching Issue

Roberts (1994) argues that in order to integrate mental health services with other health services 3 types of integration are needed[12].

4.1. The clinical integration of the care of the mentally ill with general health services - termed 'mainstreaming' - is a strategy to reduce the stigma associated with mental illness, which is partly generated by seclusion into different treatment facilities, such as St Giles. In this approach, general health facilities are used to provide mental health services. Accordingly, there will be a need to conduct training for staff nurses and others and to institute criteria for referral to St Giles, where necessary, but as a back-up facility, not the first option.

4.2. The administrative integration of mental health services with general health services requires the inclusion on mental health staff, budgets and service administration into the Divisional structure. This will require administrators to understand that mental health is a health issue like any other and cannot be relegated to a low priority or managed in a separate structure. The transfer and application of the current mental health budget into the Divisional structure should be monitored by the Ministry of Health so that is occurs without leakage.

4.3. The social integration of the mentally ill with the general community can only be achieved when people with psychiatric disorders can be effectively monitored and treated in community settings. This will require awareness raising among the general community and rapid and sensitive handling of patients' problems as they arise. Response teams will be required to work around the clock, equipped and able to respond to psychiatric emergencies and situational crises (and not to confuse the two). Arrangements should be made to avert new patients from becoming dependent on institutions for long-term residence, by identifying alternative residential options within community settings.

Recommendations

This review of the current situation in Fiji leads us to proffer the following recommendations.

5.1. That the Ministry of Health develop a set of guiding principles and policies that will direct the development of mental health services into the future. These principles could include the following.

Treatment to be provided in the least restrictive environment and as close to the patient's home as possible.

Mental health services to be integrated with general health services to reduce the stigma of mental illness and to extend training in psychiatry to other cadres in the health care system.

Divisional mental health budgets to be managed by community-based services in order to minimize resort to hospitalization.

Community services should be staffed sufficiently for treating people in the community whenever possible.

5.2. That a Technical Working Group be established by the Ministry of Health to determine the resourcing needs of decentralization, including physical infrastructure, residential options, staffing of all cadre and their training needs, and to make recommendations to the Minister according to their findings.

5.3. That service development proceeds on the basis of participatory planning with non-government organizations, patients, patient advocates, community groups and potential funding agencies, such as the Ministry of Women, Social Welfare and Housing.

5.4. That the Ministry of Health discussions with the Fiji School of Medicine and the Fiji School of Nursing the further development of post-graduate programs in Psychiatry for doctors and Psychiatric Nursing for nurses.

5.5. That the Fiji School of Medicine and the Fiji School of Nursing examine the potential for providing flexible learning approaches to courses in Psychiatry and Psychiatric Nursing.

Concluding Remarks

The mental health system and the services at St Giles Hospital and in Fiji generally are urgently in need of reform. As in many countries, mental health in Fiji has been in the

'too hard basket' for many years and has been neglected. But now, patients' advocacy groups are beginning to form and there is a growing awareness in the community that mental illnesses are relatively common, even if their etiology is still misunderstood. The great emphasis that the World Health Organization now places on mental health compels us to consider this area more carefully. It should be noted that mental health system reform has proven difficult elsewhere but much of what we hear has been focused on negative outcomes. The many thousands of patients who have benefited from modern service arrangements remain unheard. The rationale for liberating the mentally ill from institutional care cannot be challenged, but the alternatives to hospitalization need to be adequately resourced.

This will require a much wider understanding of psychiatry and preventative mental health among the health workforce, particularly primary health care workers. The amount of training needed to achieve this will be extensive and will require some to be formally trained to the level of certification, while many others will need exposure to content and current issues on a more informal basis. Fiji's training institutions should be encouraged to respond to these needs by providing courses for flexible delivery.

The current work on the revision of mental health legislation provides an opportunity to challenge the basic assumptions upon which prevention, treatment and rehabilitation are based. It is anticipated that a significant budget will be needed to implement the changed legislation, so the draft of the Bill should include the guiding principles upon which service developments will proceed. It is essential that the Ministry of Health establish and support a Technical Working Group to discuss these issues in the light of the international experience and the resource constraints that operate in Fiji.

To conclude with a vision of the future, we anticipate the day when a young person undergoing mental stress, or succumbing to a mental illness, will be counseled in a primary health care setting, referred to and diagnosed by community based practitioners and treated with the support of family and friends in the home and community. Where this is not possible, we anticipate that such a young person would be admitted to a general hospital close to their home and family, appropriately treated there and returned to the community as soon as possible, to receive follow-up visits from trained community mental health workers, and participate in Day Care activities with other young people in similar situations. We anticipate that such a young person will not go on to develop a 'career' as a stigmatized psychiatric patient, but rather to learn to manage his or her condition with the help of family and friends, while supported by qualified and enthusiastic mental health staff located nearby.

Bringing about this change is the challenge that lies ahead of us.

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Pacific Issues of Biodiversity, Health and Nutrition

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Abstract
Neglect of traditional food systems has led to serious nutrition and health problems throughout the Pacific Islands. At the same time, there is concern about the loss of traditional knowledge, customs and culture related to local foods, and of biodiversity. However, there is still a great diversity of nutrient-rich local food crops in the Pacific, along with considerable knowledge about these foods, their methods of production, harvesting, storage, and preparation. An integrated approach is needed in order to make a meaningful impact on increased production, marketing/processing and use of local food crops and foods for better health and nutrition, requiring greater collaboration between the health sector and agencies in other sectors. Priorities for action include: documentation and assessment of traditional food systems, including analysis of local foods and crop varieties for their nutrient content; innovative means of increasing awareness of the values of local foods among the general public and policy makers; conservation of rare varieties of crops and food trees and protection of the environment; and an increased focus on small-scale processing and marketing of local foods. Overriding all of this is the urgent need to mainstream consideration of these important issues into relevant national and regional policies. The rubric "Biodiversity for Health and Nutrition" incorporates all of these issues and provides a framework within which all partner agencies can be involved.

Introduction

Serious health problems have emerged throughout the Pacific as a result of lifestyle changes, including the trend towards increased consumption of imported foods of poor nutritional quality and a concomitant neglect of traditional food systems. Rates of diabetes and other non-communicable diseases are escalating, while micronutrient deficiencies, including vitamin A deficiency and anemia persist[1]. The presence of both of these types of nutritional disorders has been termed the "double burden of malnutrition". There are also serious concerns in the Pacific about the linked losses of traditional knowledge, culture and biodiversity[2].

Many varieties of staple food crops are becoming rare, and there are reports of decreasing numbers of different fish and seafood species. However, despite undeniable genetic and cultural erosion in many places, there is still a wealth of traditional and other local foods available in the Pacific Islands, with a tremendous diversity of plant and animal species used for food and numerous cultivars of local crops[1]. Growing and consuming local island foods offer many benefits, including improved health and food security, strengthening of cultural identities, environmental protection, and opportunities for income generation. In addition, growing food crops offers the opportunity for much-needed physical activity with its associated health benefits.

Many health problems of Pacific Islanders could be alleviated by a return to a greater production and use of locally grown foods.

The idea of "Biodiversity for Health and Nutrition," incorporating all these issues, has been discussed globally in order to develop a cross-cutting initiative to help improve peoples' health and standards of living[3].

The topic "Biodiversity for Health and Nutrition" was discussed by Pacific Heads of Agriculture and Forestry Services (HOAFS) on September 18-22, 2006, during their planning meeting organized by the Land and Resource Division (LRD) of the Secretariat of the Pacific Community (this takes place every two years). In preparation for that meeting, LRD requested some key stakeholders for suggestions as to key points to help guide the discussions. A core list was prepared and members of the Island Food Community of Pohnpei Email Network provided further input[4]. Key outcomes of the HOAFS meeting included recommendations for the implementation of a number of new activities along the lines of biodiversity, health and nutrition, focusing on sustainable management of local resources and locally grown foods, and ensuring that these foods are culturally acceptable, can be easily cultivated and are superior nutritionally.

The purpose of this paper is to present a summary and discussion of these comments and a case study of how different agencies and individuals, beyond the "health sector", have been interacting to further awareness of the importance of local food resources. We hope that this paper will contribute to efforts aimed at increasing production, conservation, marketing/processing, and use of local foods. This paper is also a testament to the regional interest in local island foods and to how people can interact through an email network, providing information and motivation to each other to bring about concrete action and positive outcomes.

Key points to consider in planning and implementing Biodiversity, Health and Nutrition projects and activities

The following are key areas for consideration in planning and implementing projects and activities promoting biodiversity for better health and nutrition, addressing all levels of society, from communities to state and national governments.

Inter-agency, participatory and systematic approach

A more integrated approach will be essential for making an impact on improving health and nutrition through the use of biodiversity. Community members must be included in planning the programs and activities that relate to them. There is an urgent need to improve communication and cooperation among the different agencies which deal with biodiversity, health and nutrition.

Involvement of a broader network of partner agencies

Although health departments of Pacific Islands may want to focus more on prevention, they are generally overburdened and under-resourced, and under pressure to deal with immediate problems and curative issues. There is considerable potential for greater involvement of other agencies. Without adequate supply and access to local foods, efforts to promote the consumption of the foods will be ineffective. Agriculture's interest in promoting food security and increasing food production links directly with the nutritionist's need to encourage more local food consumption. Other important potential partners include education sectors and civil society organizations such as churches, women, and youth groups. However, they need encouragement and support.

Education is a key area, and traditional food systems have to be an integral part of syllabuses. Adult education in nutrition often has a limited impact as adults are usually already set in their habits. Educating children should be a primary aim as children are still developing their norms. At the same time, adults need to set a good example in providing local and nutritious food to the children. Awareness efforts, particularly those directed towards adults, such as workshops and printed material (i.e. posters, booklets), need to be accompanied by action projects that focus on interactive demonstrations and the approach of "learning by doing," because people need to become involved in their learning in a personally meaningful way (see Gittelsohn et al this volume). Schools, workshops, sports meetings, fetes, carnivals should all offer healthy local foods to encourage their use.

The business sector should be involved as well. Local food is not always easy to sell. Selling local foods locally at reasonable prices would make it more available for those who do not have access to land or do not grow their own food for other reasons. On the other hand, local food may be expensive. Thus, in addition to the difficulty in processing fresh local food, it may be "unaffordable," especially for large families with limited income.

There are also local realities to consider. For example, in the Marshall Islands the majority of the population resides in two urbanized, overcrowded and land-limited centers, where transportation of local food from the outer islands is inconsistent and difficult and where a wide variety of imported foods (that have replaced local foods) are more easily accessible. The impact of plastic waste (the packaging of these imported foods) strewn in the lagoons or surrounding reefs on fish and seafood has yet to be studied. The specific situation will be different in other countries, requiring interventions precisely tailored to local socio-economic, cultural and environmental conditions.

Documentation of traditional food systems is a basic first step

An important and necessary first step in any meaningful intervention for improving the use of biodiversity for health and nutrition is developing an inventory of island foods, species, and cultivars, including local and scientific names and selected primary characteristics, for example availability, seasonality, nutrient content and acceptability. An ethnographic approach for collecting this information has proven to be effective in the Pacific Islands. These regional food lists are needed to improve communication between countries on local foods. Baseline information is needed on the degree of reliance on local foods in each area, for example the proportion of calories coming from locally produced food compared to imported food. Without this baseline information, it will be impossible to accurately assess the current situation and to measure impact of local food promotion programs.

The business sector should be involved as well. Local food is not always easy to sell.

Including cultural aspects in all areas of the planning and implementation stages

Culture plays a key role in local food and human health systems. In order to affect an improvement in the use of biodiversity for health and nutrition, it is important to gain an understanding of cultural beliefs, attitudes and practices related to this topic and to document this in a systematic way in order that these factors may also be considered in policy and planning work related to maintaining and promoting local food systems.

In particular, it should be noted that Pacific Island peoples have built up a diversity of about ten starch foods (including taro, sweet potato, yam, banana, breadfruit) over their time living in the islands and moving between them. That diversity allowed them to draw on different root and tree crops when others were not available. This broad range of starch crops must be maintained, together with the varieties within each species, in order to ensure food security. For example, pandanus varieties in the Marshall Islands vary in

time to ripeness, flavour, whether they are used raw versus cooked, as well as whether the leaves are used for thatching and handicrafts. Maintaining such genetic diversity and associated traditional knowledge on its use needs support and reinforcement by agencies from the agriculture and forestry sector.

Scientific evidence to back up local food promotion

In order to promote local foods a necessary first step is to know the nutrient content of different foods, varieties and cultivars. Too often in the past we said that "local food is better," without giving scientific evidence on nutritional benefits. Data must be communicated in a simple and interesting, but meaningful and powerful way to achieve increased awareness and impact. The "Yellow Varieties Message" used in Micronesia is an example of one such simple but powerful way to communicate the health benefits of the carotenoid-rich varieties of foods[5]. While Pacific Island Food Composition Tables do exist, they are not comprehensive[6]. Although the importance of this work has been often stressed, it is still difficult to access donor support. Resources of various kinds, not just financial, are needed to support the activities of people in the region working in this area.

Conservation of rare varieties

We must work to ensure the conservation of rare crop and food tree varieties. One example is Karat, the unique banana of Micronesia, which contains high levels of the provitamin A carotenoid beta-carotene, riboflavin and other nutrients[7]. Although it was once a commonly grown and consumed staple food in Pohnpei, many young Pohnpeians have never seen or eaten it. There is now an active campaign that has received international acclaim, and this is now contributing to an increase in its local production and use[8]. Karat has even been proclaimed the State Banana of Pohnpei. Other examples of cultivars that have high cultural importance, rich nutritional value, and yet are becoming rare, include Simihden, a giant swamp taro of Pohnpei[9], the Lanlon pandanus of the Marshall Islands[10], the Tearabukitaba pandanus of Kiribati[11], and seeded breadfruit[9].

We must work to ensure the conservation of rare crop and food tree varieties.

Planning and implementing awareness campaigns

We must take into account the outcomes of past meetings and workshops relating to the use of biodiversity for health and nutrition, so as to take advantage of strategies that have already been identified as being useful in carrying out awareness campaigns. Health nutrition messages should be coordinated through all relevant departments so that a consistent message is delivered to the public.

Despite previous awareness and education campaigns, there are still many people who do not connect their diet and lifestyles with the way that they feel and with their health. It is important to continue stressing the connections between food, physical activity and health. Markets for local foods can be developed by schools encouraging young people to eat these foods, and educating them about their heritage and the place of food in that heritage. A television message such as "Have you eaten a local food today?" – supported by local business – would underline the importance of local foods.

Small-scale processing and marketing of local foods

More work on the preservation and small-scale processing of local foods is needed in times of plenty, to avoid losses and to increase availability of local foods throughout the year and to make them more convenient. In addition to promoting our local foods on the basis of their nutritional values, we need to also promote cleaner products and better marketing. An attractive, well presented and accessible market place has greater appeal and can draw more customers and sell more produce. Increasing economic opportunities is an added advantage of value adding to local foods.

Also needed are simple, low-cost technologies, devices and machines that can shorten and facilitate the process of preserving local food, in order to address seasonal availability issues. For example, the traditional methods of preserving breadfruit and pandanus are very time-consuming. Presently, much local food is wasted as people may not have the time for these traditional local food processing methods. Sun drying is difficult because of flies, and materials for protecting against flies and other insects are expensive.

Incorporating breastfeeding in the "Biodiversity for Health and Nutrition" framework

Breastfeeding promotion is crucial for good health and nutrition and needs to have a place in these discussions. Breastfeeding can lead to lower rates of diabetes, celiac disease, childhood cancer, rheumatoid arthritis, multiple sclerosis, dental caries, severe liver disease, and acute appendicitis. Also, there are many benefits for the breastfeeding mother, including a reduced risk for cervical and breast cancer, osteoporosis, and other health problems[12].

Priority status in national policies and plans

A final but very important point is the essential need for prioritizing the "Biodiversity for Health and Nutrition" message within national and regional policies. Increasing the priority of this work is essential in order to ensure that local island foods have the place that they deserve among the many development topics that are currently consuming people's attention.

The information presented here is a good example of the kind of valuable product that can be generated when key stakeholders come together in old and new ways to share and build upon one another's ideas. E-mail and online discussion is a good way to consolidate a range of ideas from a group of people with a diversity of knowledge and expertise. This sharing of information and ideas further cements the relationships necessary for developing useful and appropriate strategies for the effective use of biodiversity for health and nutrition.

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"One man's life touches so many others, when he's not there it leaves an awfully big hole."

Clarence - It's A Wonderful Life

Reducing tobacco-related harm in the Pacific

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Abstract

Tobacco use is a significant public health issue for the Pacific. Although Pacific Countries recognise this fact, their ability to respond is hampered by a lack of resources. The New Zealand Agency for International Development (NZAID) Tobacco Control in the Pacific Project was launched in 2004 to help address this resource gap and to support the tobacco control work currently under way in six Pacific countries. The project aims to create a sustainable Pacific approach to tobacco control and supplements the support provided by the World Health Organization, the Secretariat of the Pacific Community, and others in the important field of tobacco control. The project uses a comprehensive approach to tobacco control focusing on creating tobacco control action plans for each country, helping with the preparation and passage of tobacco control legislation, non-government organization capacity building, health promotion and assistance with smoking cessation activities.

Background

The World Health Organization (WHO) and the World Bank have identified tobacco use as a global health issue requiring urgent action by the international community. Rapid escalation of smoking rates and tobacco consumption in developing nations is creating a significant global public health problem. Tobacco use is currently responsible for the death of one in ten adults worldwide (about 5 million people per annum). If current smoking patterns continue, it will cause some 10 million deaths per year by 2020[1].

...smoking-related disease is among the leading causes of death in the Pacific.

Small Pacific Island states are especially vulnerable to this global trend. Many Pacific states are experiencing an increase in smoking rates and tobacco consumption, and tobacco use is quickly becoming a leading cause of morbidity and mortality. It is difficult for Pacific Island states to assess the extent of the public health problems caused by tobacco use (and to develop tobacco control programmes) because of a paucity of research and data on smoking rates, epidemiology, or cultural and economic impacts of smoking.

The data we do have shows that smoking-related disease is among the leading causes of death in the Pacific.

Approximately half of all smokers die prematurely from the effects of tobacco smoke. Worryingly, there is a global trend in developing countries for increasing rates of smoking among women and young people; social groups that have been targeted by tobacco companies[2].

In addition to the obvious cost to individuals of tobacco-related diseases, there are less obvious social and economic consequences arising from tobacco use. These include:

- The cost to public (and private) health services;
- The effects of second-hand smoke, particularly on children's health;
- Money diverted to tobacco use versus other productive uses;
- Lost contribution to the economy from those ill or prematurely deceased;
- Time off work for the sick and carers of the sick; and
- Costs associated with fires caused by cigarettes.

The link between tobacco and poverty has been clearly illustrated in the WHO publication *Tobacco and Poverty: A Vicious Circle*[3]. Just as individuals are impoverished by tobacco consumption, so too are countries due to increased health care costs, lost productivity due to illness and early death, foreign exchange losses, lost revenue on smuggled cigarettes and environmental damage.

The response to tobacco harms

A number of studies have shown that tobacco control is highly cost-effective as part of a basic public health package in low- and middle-income countries. The World Bank, for example, has reported that anti-tobacco policies 'could, in sum, bring unprecedented health benefits without harming economies'[4]. Particularly important strategies include the prevention of the initiation of smoking among youth and prevention of the increase of smoking rates among social groups that have traditionally had low levels of smoking (such as women, in many countries).

The WHO has stressed the need for countries to adopt comprehensive strategies to combat tobacco use, covering initiatives in each of the following areas:

- Legislation;
- Taxation;
- Health promotion;
- Smoking cessation; and
- Research and surveillance.

To combat the global escalation in tobacco use, member states of the World Health Assembly have developed the WHO Framework Convention on Tobacco Control (FCTC), a multi-lateral treaty that includes a suite of interventions to both reduce the demand for, and supply of, tobacco products[5].

The regional response

Pacific countries have recognised the need to respond to the tobacco epidemic in the region. All WHO-member countries in the Western Pacific Region have ratified the Framework Convention on Tobacco Control, and many have initiated tobacco control projects, with the assistance of international donors.

Despite their commitment to a strong anti-tobacco framework and to the FCTC, most small Pacific Island nations lack the technical and financial resources necessary to implement the measures that are needed. Without this capacity, Pacific Island nations are seriously hampered in their ability to counter the public health effects of smoking and to meet their obligations under the FCTC. A regional workshop for representatives of Pacific Island Health Ministries, held in Sydney in October 2001, produced a preliminary stock-take of needs[6]. This stock-take indicated that, in particular, there is an acute shortage of:

- Research and analysis into tobacco use in the Pacific;
- National policies on tobacco control;
- Smokefree advocacy skills and information sources;
- Regulatory expertise; and
- Technical expertise in health promotion and smoking-cessation programmes.

The WHO-coordinated and developed Western Pacific Regional Action Plan on Tobacco or Health 2005-2009 sets out a vision and strategic plan for tobacco control in the Western Pacific for the next five years[7]. The Plan builds on previous plans and seeks achievement of the following objectives by 2009:

1. Attain ratification of the WHO Framework Convention on Tobacco Control in all Western Pacific Region (WPR) Member States.
2. Strengthen national capacity for tobacco control to enable implementation of comprehensive tobacco control strategies in an effective and sustainable manner in at least 80% (29) of WPR Member States and areas.
3. Develop and formally adopt measures to ensure sustainability of tobacco control programmes in all WPR Member States and areas.
4. Establish Regional, sub-regional and national mechanisms to address transnational tobacco control issues.
5. Enhance surveillance, research, information dissemination and advocacy across the Region

Building Regional Tobacco Control in the Pacific

During 2003 and 2004, the NZAID-funded Building Regional Capacity for Tobacco Control in the Pacific project was undertaken in the Cook Islands and Tonga by Allen and Clarke Policy and Regulatory Specialists Limited and partner agencies. Consequently, the project was extended to four further Pacific countries (Samoa, Solomon Islands, Tuvalu and Vanuatu), with the second phase of the project running over 2005 to 2007.

Effective and coordinated tobacco control programmes are imperative if the participating countries are to overcome the inter-related threats of tobacco and poverty which adversely affect the health, social and economic well being of their peoples.

Tobacco control is seen by Pacific nations as integral to Healthy Islands, and the project has been designed to be consistent with the Healthy Islands approach[8].

The project involves the following elements for each of the countries involved:

- To promote local ownership, **tobacco control advisers** are appointed by the Ministries of Health of each country. The advisers lead the project in their respective country, with the assistance of project consultants.
- Initial scoping studies are conducted, surveying existing tobacco-control initiatives in the partner countries, and identifying the available resources and needs of each country. A **review of tobacco control** is prepared with the support of project consultants.
- In fulfilment of the requirements of the FCTC, comprehensive, country-specific **National Tobacco Control Action Plans** are prepared for each country. These plans facilitate the process of planning, resource allocation and decision making on measures to enhance tobacco control initiatives in each country. The plans are intended to be action-orientated, outlining strategies and activities that need to be undertaken and timeframes for implementation, based on the STEPwise framework for action[9].

Tobacco control is seen by Pacific nations as integral to Healthy Islands,...

- Support is given in the implementation of the Tobacco Control Action Plans. **Capacity building workshops** and **direct technical assistance** is provided to both government officials and local NGOs on mutually agreed aspects of tobacco control. Team consultants attend and participate in the workshops to provide specialist advice and expertise where required. Strategy initiatives include legislative and regulatory initiatives, taxation and pricing initiatives, smoke-free healthy living promotion and smoking cessation programmes.

Project methodology is participatory and emphasises local ownership in the identification, design, implementation and evaluation of tobacco control strategies and actions. This is done to try and ensure the sustainability of tobacco control in the Pacific beyond the lifecycle of this project. In particular, the project introduces a greater degree of regional collaboration, with proposals for the exchange of ideas and approaches, and mutual support and mentoring between the countries involved. The goal is to promote a regionalisation of efforts to ensure that tobacco control activities are based around locally-identified strategies that will be sustainable and effective.

Status of the project

The project was well underway at the time of writing. With the exception of Samoa, where other priorities have delayed initiation of the project, the other five countries have initiated a wide range of tobacco control activities. Legislative development is well progressed in all six countries, with one country (Tonga) having passed FCTC-compliant tobacco control legislation. The remaining countries, including Samoa, have draft legislation in an advanced state, with at least three countries (Cook Islands, Tuvalu, Vanuatu) expected to pass legislation by the end of 2007. Four countries are exploring novel funding mechanisms for funding future tobacco control initiatives, including the option of establishing Health Promotion Foundations.

Following the facilitation of a range of capacity building workshops (on such topics as advocacy, smoking cessation, health promotion, legislation enforcement, and strategy development), a number of country-specific initiatives have been put in place. These initiatives have been selected by the partner countries themselves, often in the context of the development of a National Action Plan on Tobacco. The action plans, and the specific initiatives, reflect local circumstances and desires. Target groups for these initiatives have also been selected locally, with a particular focus on young people, health professionals, and community leaders.

Legislative development is well progressed in all six countries, with one country (Tonga) having passed FCTC-compliant tobacco control legislation.

Regionally, the project team has worked in closely with other regional funders and provider agencies, including the World Health Organization. In July 2005, a regional tobacco control workshop for Pacific countries was hosted in Suva, co-funded by the WHO and the NZAID project. This workshop was an opportunity for sharing ideas and approaches for tobacco control, identifying further future capacity needs, and promoting the idea of establishing a regional Pacific network for tobacco control.

It is planned that the Tobacco Control in the Pacific project will be comprehensively evaluated by NZAID at its conclusion in early to mid-2007. It is clear that, in order to be sustainable, local ownership of both the problem of tobacco use, and the solutions, is essential. Countries still face resourcing (personnel, technical and financial) constraints which continue to pose a challenge to this project – and the future sustainability of efforts. It will be important for regional funders and providers to work closely together in the long term to support Pacific countries in their stated desire to achieve a Smoke-free Pacific.

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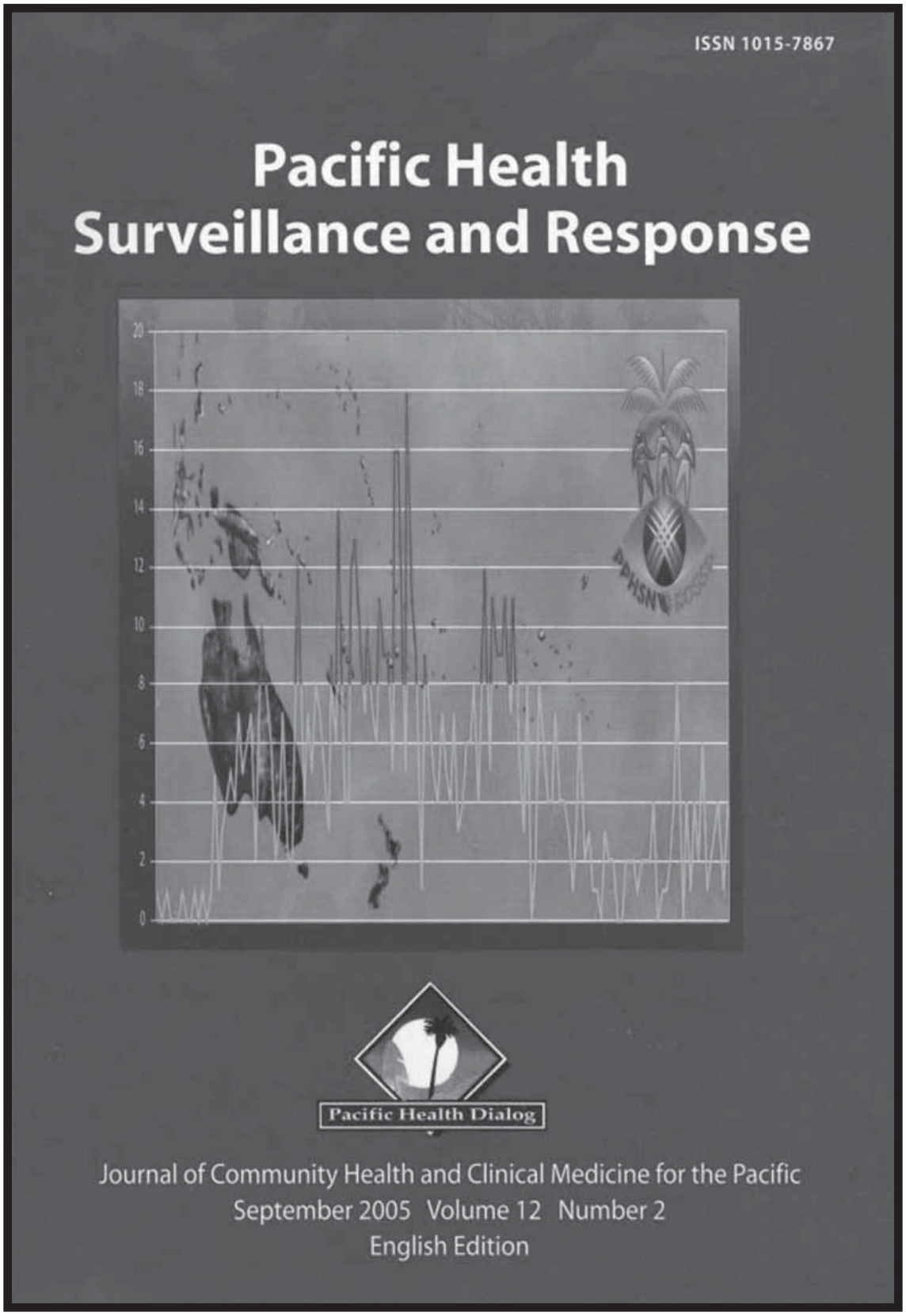
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The Role of Policy in Health Promotion - Fiji

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Abstract

Our health is impacted by many sectors. The improvement of population health and productivity requires a broad understanding of human ecology and the social determinants of our health. Influencing change across many sectors requires a level of expertise that is currently missing from Pacific health systems – policy advocacy. National health promotion councils or coordinating bodies need to work across and within many sectors – not only the health sector – to bring about wide-ranging changes to our civil and social arrangements.

Introduction

Health promotion is not only a health sector issue. Activities in other sectors impact on population health. The most obvious historical example is warfare – but most social activity affects us in one way or another. Where activities are formalized in the policies of other sectors, health promoters should advise on the potential impacts they will have, but currently we do not. In Fiji, a document entitled Recommendations for Policy to Support Health Promotion in Fiji (1998) includes recommendations that do identify this role, but which have not been acted on:

- "That the National Health Promotion Council be responsible for the development, implementation and review of policy to support health promotion in Fiji, and;
- That the National Health Promotion Council develops for the Government of Fiji a National Health Promotion Policy to coordinate action across sectors"[1].

This paper proposes a policy approach for consideration and adoption by bodies that are responsible for national health promotion activities. The example used is that of Fiji's National Health Promotion Council. It commences from the position that such councils are, by design, multi-sectoral groups with the potential to influence change in a wide range of government and non-government social and health related areas.

Yet governments tend to operate on a 'silo model' of policy and implementation and provide scant budgetary support to cross-sectoral activities and to the non-government sector. This approach to funding limits the ability to work across sectors. Integrated initiatives and programs are seen from within sectors as non-core activities that could threaten sector-specific budgets and functional autonomy. In this sectored environment we see the formation of other committees and groups with specific interests, but which could all be considered under the rubric of 'health promotion'. In such an environment a national coordinating council has difficulty in determining a role for itself.

All Council member organizations are engaged in health promotion in one form or another. The definition that brings them together is that *'health promotion is a process of enabling people to increase control over and improve their own health'*[2].

Most aspects of social, public and private endeavor impact on our health. This *'process of enabling'* requires action by and for people at all levels of society. While some people are able to *'increase control over and improve their own health'*, others are not. They need advocates to speak for them, mediators to negotiate for them and enablers to provide them with skills.

From this viewpoint, a national council has the responsibility to provide health promoting regulations, systems and information for people who can use them to their own benefit, ***and*** to advocate, mediate on behalf of and enable those who cannot. This approach requires engagement in a range of activities across many sectors, not only to promote health, but to remove or reduce the *obstacles to health* inherent in our social structures and civil arrangements.

They need advocates to speak for them, mediators to negotiate for them and enablers to provide them with skills.

Background to the National Health Promotion Council - Fiji

The Council in Fiji is chaired by the Minister for Health. Formally, it is a committee established by the Minister with invited membership from a range of public sector bodies, statutory authorities, NGOs and civil society organizations. The Council is supported in its objectives by a Secretariat staffed by the Ministry of Health and resourced with various media production technologies; and comprising 4 Sub-Committees on Policy, Research and Evaluation, Social Marketing and Community & Organizational Development.

Guiding Framework and Planned Action

The Ottawa Charter for Health Promotion (1986) is a widely accepted framework for the development of national health promotion plans. The Ministry of Health has endorsed this

approach and uses it widely, as do other Pacific nations. The Ottawa Charter is used herein to present our ideas and to make proposals within a well-used and widely-understood framework. The Ottawa Charter has five components: *Building healthy public policy*, *strengthening community action*, *creating supportive environments for health*, *teaching personal skills and reorienting health services.*

This paper deals with the first of these - *building healthy public policy* - as the principle role for the Council, and uses the other components, particularly *creating supportive environments for health* to guide the implementation of a proposed National Health Promotion Policy. In the process of developing the policy we reviewed the publication *Recommendations for Policy to Support Health Promotion in Fiji* (1998)[1].

The Social Determinants of Health

This discussion is based on the proposition that promoting the health of human populations requires a broad understanding of human ecology and how humans flourish in the natural world. Some may see this as too broad a vision for health promotion, but with this view we can accept that maintaining human health largely depends on favorable environmental and social factors. Organic factors account for the rest, but many of these also have their origins in environmental insults, or in unhealthy social behaviors or choices. Effective health promotion must, therefore, actively influence the social factors that determine the health of populations and the range of choices available to people.

The WHO Charter defines 'health' as a *"complete state of physical, mental and social wellbeing"*, to which we, in Fiji, add 'spiritual' wellbeing and 'economic' wellbeing. In this paper the concept of 'social wellbeing' is used broadly to include economic wellbeing. The term 'spiritual wellbeing' does not imply conformity to any religion, but is used as an expression akin to 'harmony with our faiths, ourselves and our environment'.

The WHO Charter defines 'health' as a "complete state of physical, mental and social wellbeing", to which we, in Fiji, add 'spiritual' wellbeing and 'economic' wellbeing.

The knowledge that health is closely related to social conditions is ancient. So is the notion that 'the safety of the people is the highest law' (Cicero, c 60AD) and is achieved through social organization. More recently, McKeown (1976) has shown that the main driving forces behind declining mortality in the modern era were improvements in food supplies and living conditions[3].

Evidence now shows that most of the global burden of disease and the bulk of health inequalities are caused by the social determinants of health[4]. Population health can be described on a 'social gradient' where the wealthier suffer less morbidity and live longer than others, not only the poor. Factors such as stress, early life, social exclusion, work, unemployment, social support, addiction, food, and transport have all been shown to impact on our health, and all of these are related to social conditions.

Clearly, achieving 'health' requires activities well beyond influencing individuals to change their behaviours. Achieving 'health' requires policy change and activity in, and well beyond, the health sector. Accordingly, the policy direction proposed below is designed to produce policy changes in the many sectors that influence the conditions of our lives.

5. Secular Trends

The term 'secular trends' is used to describe the social changes that occur over time, arising from a mix of influences, including education, urbanization, advertising and market forces. They are most easily visible in changing fashion trends, changing social norms of behavior, uptake of new technology, use of work and recreational time and changing expectations for the future. Secular trends are very powerful and can have either positive or negative effects. The social reaction to passive smoking was a positive secular trend, while the increase in resort to violence among Pacific youth is clearly a negative secular trend.

The important point for health promoters is to identify and use positive secular trends thematically (see below), and to be aware that reversing negative secular trends requires intensive resources and regulatory action across many sectors. It also means that health promoters need to be 'doubly clever' in their selection of strategies and methods to influence a trend at strategic moments and points. We need to be poised and ready to do that.

Intersectoral Action in Health (IAH)

This paper proposes that national health promotion councils become active in public policy development on the social determinants of health. Impressive health and social welfare gains are possible in countries with low GDP per capita. Countries that have successfully implemented 'social determinants health policy' (e.g. Cuba, Sri Lanka, Costa Rica and others) have shared 5 social and political factors[5].

1) A Historical Commitment to Health as a Goal
2) A Social Welfare orientation to development
3) Community participation in health decision making
4) Universal coverage of health services (equity)
5) Intersectoral Linkages for Health

But not all countries exhibit these five features. In Fiji we have asked ourselves the following questions and answered them.

Are we committed to health as a goal for our people? We seem to glorify our youths' sporting achievements but adults maintain relatively poor health and use health services at last resort.

Is our national development orientated to social welfare? We seem to be focussed on economic development while and our social welfare problems continue to grow.

Do we encourage community participation in health decision making? Yes, but much of it is passive participation. The use of the 'settings' approach is strengthening active participation.

Do we have universal health coverage? Yes, we are quite good at it despite geographical difficulties, but we base it on low hospital costs and Medical Superintendent's discretion to waive fees.

Do we have strong intersectoral links? We seem to be developing in separate sectors, although society itself is relatively seamless.

Rosenfield (1985) found that IAH was the weakest component of the strategies associated with 'Health for All by the Year 2000'[6]. We know now, in 2007, that 'health for all' was not achieved – far from it. IAH was found to be weak when it was implemented in isolation from the other 4 factors. IAH also suffers from difficulties in providing evidence of its effectiveness, due to the complexities of measuring the many social processes that affect our health. As mentioned above, there are few budgetary or economic incentives for IAH.

The effort is and should be multi-pronged and as diverse as the many health and social welfare interests that emerge.

With Rosenfield's analysis we can identify why we have struggled with IAH here in Fiji. We must strengthen the factors in which we are weak: our commitment to health as a social goal; our national development orientation, active community participation and intersectoral linkages.

A role for a national council clearly emerges: *policy development to strengthen health as a social goal, reorientation of our national development towards social welfare, and improving the active participation of the community and their organisations.*

Accepting the many emergent interests of civil society does not mean a fragmented national health promotion effort. The effort is and should be multi-pronged and as diverse as the many health and social welfare interests that emerge. For the Council to play an effective role in assisting all of these diverse interests it will need to operate at a higher level of influence and provide a channel of communication for them all. Only then may we expect some enthusiasm for IAH - when diverse interest groups find value in working together towards achieving common goals.

What Strategies?

The proposed role has several features we need to consider carefully. It is necessarily 'political' in its need for social adjustments and increased equity. As such, it questions the notion that market forces alone will solve our social ills and health problems. It is comprehensive in scope in that it acknowledges that policy change in many sectors impacts on the health of the whole population. Yet it also acknowledges that, despite limitations in delivery, selected and specific health and disease information is needed by the general community to assist people to make healthy choices.

It seems then that a national health promotion council and its members must engage in strategies at three levels; comprehensive national policy development, community participation in social change, and the provision of selective disease orientated information for individuals.

The Selective Approach: Should we focus on a small number of cost-effective time and resource limited interventions?

Strong evidence now shows that community–based health promotion campaigns have small effects for only short periods[7]. Merzel and D'Afflitti (2003) conducted a review of 32 community-based prevention programs implemented over the last 2 decades in the United States. They start with the uncomfortable fact that many community health promotion programs have *'produced only modest effects in changing population risk behaviors'*. The majority of large well-designed programs for cardiovascular disease and smoking cessation produced only small, short-lived effects.

The evidence for success is poor indeed, partly because of the limited ability to evaluate campaigns. But the exception to this appears to be in diseases where the consequences of acquiring it are both immediate and large. Merzel and D'Afflitti identified three main contributing features of successful HIV prevention programs, which, interestingly, did *not* including the provision of information alone.

Emphasis on modifying social norms to change the social context in which health risks occur.

Use of formative research to continually adapt a program to the needs of the recipients.

Understanding the nature of the risk, which tells us that people can perceive and act on the difference between immediate risks with serious consequences from few actions; and, long-term risks that may or may not happen even after taking the risk many times.

Their findings suggest that if we are to conduct community-based campaigns in Fiji we ought to focus our activities on the social context in which risks occur – and not just behaviour change. Again, even in proposing selective interventions we are pointed towards activities that will change the *social determinants* of risk taking behaviour.

A Mixed Selective/Comprehensive Approach: Should we apply comprehensive approaches in selected settings?

The application of the 'settings approach' falls between selective interventions (such as a health promotion campaign) and comprehensive interventions (such as policy change). It is selective in that it selects one setting (e.g. a school or a market place) within a community; and, comprehensive in that it addresses a wide range of health policy issues within the selected setting.

Its inherent limitation is that it is selective. Not all schools and market places within the community are involved, although in time they may be. But its strength lies in community participation, one of the 5 factors identified by Rosenfield

(1985)[6]. But the greatest risk to the 'settings approach' is that participation may be passive rather than active.

The Kadavu project (Roberts 1997) demonstrated that the active involvement of the community's legitimate structures was critical to the project's success[8]. *"The essential activity was to provide information on village health issues to people who were endorsed to make decisions within existing local government and traditional structures".* The Kadavu Project provided a model upon which much of the application of the settings approach in Fiji has been based. Already, successful and unsuccessful projects are distinguishable by their degree of active community participation.

Proposed changes to the administration of Fiji's Provinces now lend themselves to broadening the settings approach along with the decentralization of development. Strengthening provincial administration provides a greater opportunity than previously for the application of the settings approach to entire provinces, not just to the institutions within them. In this way the selective settings approach would become more comprehensive and could steer the development of provincial and national policy towards social welfare and achieving health as a social goal.

A Comprehensive Approach: Should we address the social roots of unfair and avoidable human suffering?

If a national health promotion council is to contribute to addressing the social determinants of health it must become involved in comprehensive, high level policy strategies. Yet this is possibly the Fiji council's weakest point. To date the Council has not become involved in the broad debate on the direction of national development, yet it does have the potential to provide a powerful influence.

Before it can make effective contributions to national policy orientation and development the Council needs to strengthen itself in three areas: strategic positioning, policy advocacy and policy expertise.

Strategic positioning

The Council is strategically well-positioned but it remains an invited committee of the Minister for Health and with no substantive authority of its own. Although the Council is chaired by the Minister it does not yet have any representation on the Cabinet Sub-Committees or Task Forces. This is where policy is debated and prepared prior to submission to Cabinet and, as such, it represents the Council's best opportunity for strategic influence.

Policy Advocacy

Advocates create winning arguments and present them to people in position to influence a decision. Advocacy is a 'small p' political activity in that it is not party political; it serves to present the concerns and proposals of interest groups to decision makers, regardless of political alignment. The skill of advocacy is to remain unaligned and to build constructive relationships with everybody.

Advocates create winning arguments and present them to people in position to influence a decision.

In health promotion, where we talk of 'changing the social determinants of health', it becomes easy to confuse a concern for the safety of the people with the socialist side of politics. Already in this discussion we have made comment on the limitations of the economic focus of neo-liberalism to produce short-term health and social outcomes. Advocacy is a skill that maneuvers through such political traps and concentrates on representing the concerns of the interest group, regardless of the political orientation of government.

Fulfilling such a role is easier from the position of a corporate body or a statutory authority than from a government Ministry. Public sector employees can be constrained from advocating policy change. This is one reason why we propose that health promotion councils need to be independent of government - and also a reason why health promoters need to be brave people. By *'leaving policy to the policy makers'* we limit our ability to influence change in the social determinants of health.

Policy Expertise

Health promoters in the Pacific are quite limited in policy analysis expertise. Until this is strengthened they are unable to contribute much in the way of policy advice or impact analysis. Young policy analysts start by drafting policy from guidelines and learning how the national policy process works. With more experience they learn to read the secular trends, the social climate, the mood of government and the potential for particular interests to be progressed or delayed.

So, what would these experts do? In terms of the 5 areas of the Ottawa Charter they would represent health promotion concerns in the following ways:

Public Policy Development. Engaging in cross-sector policy advice through Cabinet Sub-Committees and Task Forces and through formal and informal liaison between government and non-government organisations.

Creating Supportive Environments. Providing information to all levels of government on issues related to health and productivity, in order demonstrate the economic importance of healthy populations and to encourage national commitment to health as a social goal.

Strengthening Community Action. Strengthening of urban, provincial, district and village level participation in health promotion and social welfare.

Teaching Personal skills. Teaching leaders, policy-makers and senior officials the methods to calculate the health costs and benefits of their policy proposals. Teaching advocacy and collaboration skills to health promotion champions in government and non-government.

Reorienting Health Services. Advising government and the Ministry of Health to work to a broader definition of 'health work' in order to also address the social determinants of health.

Councils would need to budget for engaging such expertise or build it into their staffing arrangements. But more importantly, councils will need to lobby government for the inclusion of such expertise, wherever it is sourced, in the policy development process. A minimal outcome would be for Cabinet to require policy proposals to be vetted by health promoters for their cross-sector potential for adverse health and/or social impacts.

Engagement in the Public Policy Process

Public policy is developed by government bodies and officials for purposive action by or for governments. It includes subsequent agreements related to its resourcing, implementation and enforcement. To succeed in achieving an impact on a problem, public policies require components of community education and enforcement, which may, in turn, require organizational changes to resource and implement. Seen in this way policy is far more than a mere statement of intent.

'Campaigns' should take several forms and be tailored to the needs of the hearer.

It is recommended that:

Recommendation 1. Pacific health promotion councils identify personnel to be trained or engaged in advising governments on the role of the social determinants of health in population health and national productivity.

Recommendation 2. Pacific health promotion councils place representatives on government's policy development committees and relevant task forces.

Recommendation 3. Pacific health promotion councils' public policy advice places emphasis on policy being conducted as *a set of activities* that includes policy definition, community education and the allocation of resources for effective implementation and enforcement. (A public policy should not be considered 'in place' without all of these components operating).

Regulation

The approach of 'regulation alone' has several notable failures in Fiji. Recently, it came to light that there had been no prosecutions under the Tobacco Control Act and the sale of cigarettes to minors was continuing. Seat belt legislation has not been enforced. Dangerous products like paraquat are still available 'off-the-shelf'. Excessive motor vehicle exhaust emissions continue to pollute our daily lives. Yet there is ample evidence from elsewhere that regulation, public education and enforcement together do work to reduce illness and trauma.

These failures of 'regulation alone' underpin the approach suggested above; that the public policy process is a *set of activities*, and more than the mere passage of a piece of legislation or statement of intent.

Episodic interventions

These usually take the form of community-based campaigns designed to inform people of a specific health risk and to propose alternative behaviours and choices. Episodic interventions are normally time and resource limited. Ideally, they are evaluated during and after the episode, but commonly they are not evaluated at all. An example is an anti-smoking campaign targeted at youth, which may run on television and radio for a defined time. These are the 'health promotion campaigns' we are all familiar with.

But the 32 campaigns reviewed by Merzel & D'Affliti (2003) suggests that episodic interventions have very limited effects and for only a short time, and that they need to be developed according to the nature of the disease and the immediacy of the risk. Different strategies are needed to address different problems. 'Campaigns' should take several forms and be tailored to the needs of the hearer.

The diversity of the population of Fiji extends well beyond the 3 languages and cultural groups. It is simplistic to think that there are only three major population groups in Fiji. Within each there are further sub-divisions, all of which are complicated by varying stages of development and issues of access, religion, literacy and age. A single 'health campaign' in Fiji has far less potential to reach all groups than in a more homogenous society. Targeting messages to particular groups and then tailoring it to their needs may be more effective than broad based community education campaigns.

But Merzel & D'Affliti also draw attention to the methodological difficulties in evaluating community-based health campaigns, in particular in accounting for the powerful effects of secular trends. he anti-smoking campaign in Pawtucket demonstrated an 8.9% decrease in smoking, but in the comparison city smoking decreased by 8.2% due to an anti-smoking secular trend. The secular trend was far more powerful than the campaign.

Thematic interventions

These attach themselves to secular trends and social concerns, such as safety, family values, pollution or human rights. For example, 'passive smoking' campaigns succeeded because they attached to the issue of the rights of non-smokers - to clean air. The competing rights of smoker and non-smokers were 'weighed in the balance' and smokers were seen to be intruding on the rights of others. So now we have non-smoking zones in restaurant, public transport and offices. Thematic approaches appear to be more successful that episodic, especially when backed by regulation. Thematic interventions may also take the form of community campaigns, but they need to be sustained until the attached thematic issue has achieved wide social usage. One of the current anti-smoking campaigns '*What don't I do? - smoke*' is attaching itself to the youth theme of 'being cool'.

It is recommended that:

Recommendation 1. The choice of health promotion strategies and methods are informed by social marketing research that identifies and utilizes secular trends, thematic interventions and strategic opportunities.

Recommendation 2. Health promotion campaigns are targeted to specific population sub groups and then tailored, through formative research, to be delivered in modes that best meet their needs.

Conclusion

This paper supports the idea that the first objective of health promotion councils should be 'to promote health and prevent illnesses', but it proposes that, to do this effectively, councils should be involved at high levels of national policy development. To date, the Council has not had the expertise or vision to provide policy advice to government or to advocate for its interest groups at the political level.

The question for the Council to consider is whether, or not, it sees policy involvement as a role for itself. If it does, it will need to do it well enough for its members and the many other health and social welfare organizations to perceive value in associating with the Council to further their own objectives. If it doesn't see a role for itself at the policy level it is left with little else but to support its technical staff. Attempting to coordinate the activities of its various organizational members would be a thankless, difficult and needless task. But if the Council does see policy level involvement as its role, it will need to prepare for it by identifying or training policy analysts and advisors and by lobbying government for positions on, or access to, policy development sub-committees and task forces.

The need for policy advice to influence these trends in the social determinants of health will continue to be needed, and, until provided,...

Whatever the Council decides, the secular trends impacting on Pacific populations will continue to produce both negative and positive health effects. The need for policy advice to influence these trends in the social determinants of health will continue to be needed, and, until provided, will leave the Council and the MoH 'holding the wrong end of the stick' – trying to overcome negative effects after they have occurred.

Positive secular tends offer some hope that the value of health will increase as an individual and social goal. But even positive trends need to be mediated and facilitated if they are to last into the future as new social norms. Regulation needs to follow and to be resourced.

But above all, if the Council does not accept a role at the policy level, it will have compromised two of the most important principles of health promotion – advocacy for those unable to speak for themselves, and the intersectoral collaboration needed to address fundamental human issues that 'transgress' the artificial boundaries of governments, agencies and even countries.

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From 'What' to 'How' – Capacity Building in Health Promotion for HIV/AIDS Prevention in the Solomon Islands

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Abstract

This paper describes a capacity building process undertaken within the HIV/AIDS prevention project of the Adventist Development and Relief Agency (ADRA) in the Solomon Islands. ADRA HIV/AIDS has recently reoriented its project structure, moving beyond its awareness raising approach to incorporate health promotion frameworks, theories, strategies and assumptions. These have been used to inform project practice in project planning, delivery and evaluation. This paper shares what has worked and not worked in the capacity building process, including a project evaluation of the initial HIV/AIDS awareness raising project and the application of a number of capacity building strategies, including utilising a volunteer Australian Youth Ambassador for Development (AYAD[1]) funded by the Australian Agency for International Development (AusAID). Existing and new projects are outlined. The underlying theme is that any capacity building exercise must include structural support (e.g. management, national frameworks) to ensure the incorporation of new initiatives and approaches. With time this enables ownership by counterparts and external partnerships to develop. The presence of an AYAD volunteer has been an effective strategy to achieve this. Reflections from the evaluators, the AYAD volunteer and the HIV/AIDS team are included.

Introduction

In 2005, 40 million people worldwide were living with HIV/AIDS, with 3 million deaths due to AIDS[2]. For a quarter of the world's population, absolute poverty remains the principal determinant of health status including exposure to HIV/AIDS[3]. However, it is particularly important to address the range of socioeconomic and sociocultural factors which contribute to vulnerability[4]. The World Health Organization recently made scaling up HIV/AIDS treatment a key priority[5], while the Joint United Nations Programme on HIV/AIDS (UNAIDS) and Family Health International (FHI) have together called for "greater attention on reaching out urgently to increase HIV prevention awareness and knowledge, introduce and support risk reduction behavioural and social change, foment positive and safe sociocultural norms, build solid national and transnational infrastructures, as well as share resources worldwide to reduce poverty as a driver of the epidemic"[6].

Not only is the HIV/AIDS epidemic recognised as an emergency, it has been argued that "its devastating effects on societies may qualify it as one of the most serious disasters to have affected humankind… warrant(ing) a full disaster management response".

Not only is the HIV/AIDS epidemic recognised as an emergency, it has been argued that "its devastating effects on societies may qualify it as one of the most serious disasters to have affected humankind… warrant(ing) a full disaster management response"[7].

Solomon Islands is a Pacific Island nation with a population of approximately 530,000. The capital city of Honiara has a population of approximately 60,000. More than 80% of the population live in rural villages across the archipelago of over 900 islands. Currently, the number of confirmed cases of HIV in the Solomon Islands is six, with the suspected number of cases currently over 100. Transmission of HIV in Solomon Islands, as in neighboring Papua New Guinea, is

[1]The AYAD program is funded through the Australian Agency for International Development (AusAID). It aims to strengthen mutual understanding between Australia and countries of the Asia - Pacific region and make a positive contribution to development. The Program places skilled Australians aged 18 - 30, on short term assignments (3 - 12 months) in developing countries.

[2]UNAIDS & WHO (2005). AIDS epidemic update. UNAIDS, Geneva.

[3]Gilbert, L. & Walker, L. (2002). Treading the path of least resistance: HIV/AIDS and social inequalities – a South African case study. Social Science & Medicine, Vol. 54: 1093–1110.

[4]UNAIDS (2006) SubSaharan Africa. URL: www.unaids.org/en/Regions_Countries/SubSarahanAfrica.asp (accessed 28 May 2006).

[5]World Health Organization (2003). Global AIDS treatment emergency requires urgent response: No more business as usual. WHO Press Release, 22 September. URL: www.who.int/mediacentre/releases/2003/pr67/en (accessed 22 September 2003).

[6]Makinwa, B. & O'Grady, M. (2001). HIV/AIDS Prevention Collection. UNAIDS & FHI: Washington.

predominantly through heterosexual contact. The Ministry of Health (MoH) estimates that by 2010 there will be close to 350 new HIV cases in the Solomon Islands. In response to this, the Solomon Islands Government (SIG) developed the National HIV/AIDS Policy and Multi-Sectoral Strategic Plan from 2005-2010 (NHPMSP) in partnership with key stakeholders, including ADRA Solomon Islands' HIV/AIDS Project (ADRA HIV/AIDS). The SIG and nongovernmental organizations (NGOs) use the Abstinence, Be Faithful and Condoms (ABC) prevention strategy and although no local input or consultation was undertaken to determine the appropriateness of this strategy in the Solomon Islands context, it is commonly employed throughout the Pacific and the world[8,9,10].

The NHPMSP informs the work of ADRA HIV/AIDS. The goal of ADRA HIV/AIDS is to partner with young people in Honiara to provide accurate information and support to make healthy choices and together fight against HIV/AIDS. This goal reflects ADRA HIV/AIDS' recent reorientation, moving beyond its awareness raising approach to incorporating health promotion frameworks, theories, strategies and assumptions to inform practice in project planning, delivery and evaluation. The current project phase follows a seven-month pilot of a new range of strategies and initiatives to support behaviour change following the 2005 Project Evaluation[11], which highlighted the need for project redesign. This is in response to UNAIDS and WHO evidence that demonstrates changes in behaviour to prevent infection (including increased use of condoms, delaying first sexual encounter and reducing the number of sexual partners) reduces the risk of HIV infection[12]. The current phase moves beyond awareness raising however retains some of the strengths such as a gendered approach which had proven successful. While acknowledging the limitations of the behaviour change model and the need to progress to a broader social determinants approach[13,14,15], the organisational and national contexts make this difficult to attain in the short term. The Secretariat of the Pacific Community (SPC) has found this consistent amongst HIV/AIDS prevention projects across the Pacific[16,17]. Hammar and colleagues' work in sexual health, sexual networking and HIV/AIDS in Papua New Guinea (PNG) emphasises the complexity of the social and cultural contexts in Solomon Islands' nearest neighbour which contribute to HIV/AIDS risk[18,19,20,21]. This work also demonstrates the need to strive towards a broad social determinants of health response for sexual health projects in the Pacific. ADRA HIV/AIDS is taking its first steps beyond awareness raising to attain this.

The NHPMSP informs the work of ADRA HIV/AIDS. The goal of ADRA HIV/AIDS is to partner with young people in Honiara to provide accurate information and support to make healthy choices and together fight against HIV/AIDS.

This paper shares ADRA HIV/AIDS' story in HIV/AIDS prevention, from the project's conception to its various milestones, including the Evaluation which led to subsequent efforts to move beyond awareness raising towards behavioural change using health promotion frameworks. A key strategy for facilitating this conceptual shift was the addition of an Australian Youth Ambassador for Development (AYAD) volunteer to the team.

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[22]ADRA Solomon Islands (2003) Honiara Schools and Youth Group HIV/AIDS Awareness and Education Project Project Proposal 2.4.4 Activity 5.

Project Background

ADRA HIV/AIDS commenced the 'Honiara Schools and Youth Group HIV/AIDS Awareness and Education Project' in September 2001. The project was designed to respond to the escalating risk of HIV/AIDS in Solomon Islands given the high risk sexual behaviour identified in youth in Honiara. It was anticipated that raising the awareness of youth regarding transmission, consequences and prevention of HIV/AIDS would "help them avoid contracting HIV/AIDS"[22]. The project, funded by AusAID for a two-year term, with a one year extension, was staffed by a project manager and two health educators. During the implementation of the project the Solomon Islands underwent massive political, social and economic upheaval with the almost total breakdown of law and order and weak government systems during the 'ethnic tension'. This had a major impact on project implementation from personal safety to access to target groups. In July 2003 the Regional Assistance Mission in Solomon Islands (RAMSI), with police and military forces arrived in Solomon Islands to restore law and order and strengthen government systems. This allowed ADRA HIV/AIDS to implement its programs in a relatively stable environment.

Evaluation process

The approach used by ADRA HIV/AIDS to assist in the reduction of the risk of HIV/AIDS was primarily awareness raising using the ABC methodology. The Evaluation undertaken in January 2005 found that although some innovative strategies were being used, the awareness raising strategy was having little if any impact on the target audience[23], with many youth initiating unsafe sexual practices between 11 – 13 years of age[24]. The Evaluation also found an increased concern that sex was being used as a way to attain cash[25,26]. High levels of family breakdowns and extra marital relationships were reported to be increasingly common during and post the ethnic tension[27]. ADRA HIV/AIDS' strategies were based on the assumption that awareness raising would automatically result in behaviour change within the target audience. This assumption was challenged and recommendations included a broader health promotion approach be adopted. Evaluations of HIV/AIDS prevention programs throughout the Pacific undertaken by SPC have found a similar pattern:

Early approaches to behaviour change [in the Pacific] assumed that all people need to know about HIV, how it was spread and what the results and impact of infection were, and they would take concrete steps to change their behaviour. This approach helped raise awareness but was insufficient to promote or sustain behaviour change. Clearly, the prevention of HIV infection is about developing a range of strategies and interventions that support behaviour change. It has become clear that effective HIV risk reduction interventions extend beyond basic information giving and help: sensitise people to personal risk, improve couples sexual communication, increase individual's condom use skills, the perception of lower risk practices as the accepted norm, and help people receive support and reinforcement for their efforts at changing[28].

In response to this context, a seven month pilot was recommended in which the project could re-orient from awareness raising to a broader health promotion response. This initial re-orienting saw a more intensive project implemented to work specifically with a group of students in the ongoing project. The newly established (April 2005) Chinatown ADRA HIV/AIDS Resource Centre (ARC) expanded and its radio project was modified to be less formal and more accessible to those listening.

The ADRA HIV/AIDS team comprised of staff with nursing and health education qualifications. As a result there was limited previous exposure to health promotion frameworks or theories, with education and medical frameworks informing the awareness raising model. Throughout the three week Evaluation process (January 2005), significant time was devoted to sharing health promotion concepts such as the Ottawa Charter, Stages of Change and Diffusion of Innovation theories and mapping of social, cultural and behavioural determinants of sexual health and sexual networking. This capacity building element was followed by a week-long workshop in May 2005, which continued the team's exposure to health promotion and project management frameworks.

The team could see the potential of using a broader health promotion approach, however had limited internal organisational capacity to move in that direction.

The team could see the potential of using a broader health promotion approach, however had limited internal organisational capacity to move in that direction. Other organisations, both government and NGOs, continued using awareness raising and health education frameworks, making it difficult to progress towards the adoption of health promotion frameworks. This led to ADRA HIV/AIDS accepting the offer of a volunteer with specific skills in health promotion and project management to work with the ADRA HIV/AIDS team to build capacity in health promotion. The result was the addition to the team of an Australian Youth Ambassador for Development (AYAD) volunteer with a background in public health and health promotion.

[23]MacLaren & MacLaren (2005). Evaluation Report: Honiara Schools and Youth Group HIV/AIDS Awareness and Education Project. Honiara, Solomon Islands.

[24]Also see: Ministry of Health, Solomon Islands. (2005) National HIV Policy and Multisectoral Strategic Plan 2005 – 2010.

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[26]Also See: WHO (2006). Second Generation Surveillance Surveys of HIV, other STIs and Risk Behaviours in 6 Pacific Island Countries (2004-2005). World Health Organization Western Pacific Regional Office, the Secretariat of Pacific Community, the University of New South Wales and the Global Fund to Fight AIDS, Tuberculosis and Malaria.

[27]Personal Communication - Ministry of Health official January 2005

[28]Drysdale, R. (2004a). Review of HIV/AIDS & STI Information Materials Report. Franco-Australian Pacific Regional HIV/AIDS and STI Initiative, South Pacific Commission.

Outcomes

The AYAD volunteer commenced her 12 month assignment in October 2005. The AYAD volunteer's role was scoped during the strategic planning process that was underway to enable ADRA HIV/AIDS to reorient its focus to incorporate health promotion assumptions, models, frameworks and strategies. For ADRA HIV/AIDS this was the first strategic planning process undertaken by both the team and organisation. The Strategic Planning Workshop spanned the week prior to the AYAD volunteer's arrival, where the team considered a range of information, including data from youth and other stakeholder consultations. A vision, goal and objectives were developed. Time was also allocated to familiarise the team with strategic planning processes. Following the Workshop, the AYAD volunteer partnered with ADRA HIV/AIDS in the continuation of the strategic planning process to develop its action steps and finalise the actual strategic plan.

A clear challenge for ADRA HIV/AIDS was to translate ideas and plans into the matrix format typical of strategic plans. Despite the time spent during the Workshop, facilitating in Pijin (lingua franca of Solomon Islands) and explaining the process, the team remained apprehensive about this, noting that the team's "way of thinking" was not visually represented within the typically Western managerialist format[29]. These anxieties were heightened because of feeling unsure how to actually apply the recommended health promotion approach to the project in the Honiara setting. To move beyond this, the AYAD volunteer encouraged the team to reflect upon and (re)frame the strategic planning data in a way that was meaningful. This meant explaining the format word by word (eg. "goal", "objective", "strategy") as an extension of the strategic planning workshop, with the team simultaneously putting ideas into the Action Steps matrix to see where it "fit". This was the first time that each member of ADRA HIV/AIDS linked every-day work to a longer term vision. The team found the strategic planning terminology and process made sense but at first its application to practice was not fully comprehended. Initially the team felt unsure about whether they could share ideas should those ideas not fit the matrix. In response to these factors, the ongoing planning process facilitated the team's reflection around where and why words were placed in a particular position in the matrix and what it would mean for practice both in daily work and the longer term vision.

A clear challenge for ADRA HIV/AIDS was to translate ideas and plans into the matrix format typical of strategic plans.

The resulting draft Action Steps provided a framework within which ADRA HIV/AIDS conducted its operational planning, while continuing to explore and "imagine" how the health promotion concepts, assumptions, models and frameworks might apply to the Solomon Island context. The operational planning also allowed individual team members to reflect upon the content within the Action Steps and adjust it accordingly. Each project plan was then discussed by the team as a whole. It was very important to conduct the operational planning prior to finalization of the Strategic Plan because apart from the Project Manager, no member of ADRA HIV/AIDS had been involved in project management. In the words of one of the team the concurrent operational planning enabled the team to "walk in the light" for planning and implementation.

The theoretical basis for chosen strategies by the AYAD volunteer reflected the Kolb cycle[30] in order to enhance team learning over time. This included reflection in weekly team meetings, theory with health promotion workshops, team application of health promotion models, frameworks and strategies, and planning for implementation during the next project cycle (including the incorporation of the Action Steps within the draft strategic plan)[31]. As the team processed the new approach over time and developed new ideas for implementation, the AYAD volunteer acted as a sounding board while providing support mechanisms for the future, such as establishing support contacts with other similar projects around the region and establishing a resource library.

ADRA HIV/AIDS previously had no monitoring and evaluation (M&E) frameworks in place, nor were any of the staff skilled in monitoring the various components of the project. The operational planning process provided a good opportunity to embed M&E systems by making each team member accountable for their particular project components as well as providing a learning opportunity relating to M&E. To deepen the team's understanding of the link between project management and donor reporting the team was included in the preparation of donor reports. The team's response to this was "ah, now we see why we have to collect that information", followed by the provision of additional suggestions for how to better data collection in future. Perhaps the most invaluable outcome of the operational planning process was the team's resultant enthusiasm for the increased responsibility that resulted.

One of the Evaluation recommendations was for the "provision of an appropriate training and mentoring program or similar to build a supportive environment in which effective and efficient management practices can flourish"[32]. This ultimately needed an organizational response beyond the scope of the HIV/AIDS project. The AYAD volunteer

[29]In the facilitators experience, using a matrix format with terminology such as strategy, key action steps etc can also be alienating for those from a 'Western' perspective. This process has been a learning experience regarding the use of widely accepted 'donor' formats for planning processes (and other reporting) and the use of formats accessible to all participants.

[30]Dick, B. (1990). Design for Learning: processes and models for design of learning experiences (5th version). Interchange: Chapel Hill, QLD.

[31]The AYAD's approach to their role was supported by the Evaluation recommendation for the team "to participate in educational workshops to become aware of and be able to apply basic health promotion frameworks… to mov(e) from individual approaches to community/population approaches… working broadly with the social, economic, political, cultural and physical determinants of health and health related behaviour" (MacLaren & MacLaren, 2005: 30).

[32]MacLaren & MacLaren (2005). Evaluation Report: Honiara Schools and Youth Group HIV/AIDS Awareness and Education Project. Honiara, Solomon Islands. Page 31.

contributed to enable the sustained reorientation of the HIV/AIDS project by providing managerial support at the project level. This was in the form of assistance with cashflows, monitoring and evaluation, grant proposals, preparation of position profiles and initiating efforts to diversify sources of funding. Informal training for ADRA HIV/AIDS was also provided including independent learning skills, computing skills, how to obtain resources from key agencies (eg. WHO, UNAIDS), and establishing support contacts with forums and other projects in related areas. The team indicated that this enabled them "to learn from other's experiences and feel connected to the wider community", including learning how to update themselves regularly on regional and global activities in health promotion and HIV/AIDS.

Discussion

The reorientation of ADRA HIV/AIDS has led to a redesign of existing projects and the addition of new ones. The new project design introduces a Peer 2 Peer (P2P) project, where 30 Honiara youth will be screened and trained as P2P educators to partner with their peers, various churches[33] and ADRA HIV/AIDS. The Media Project has been reduced in scope and will fall within the P2P Project to provide incentive for P2P educators in partnering with ADRA HIV/AIDS. The Media component will use youth engagement strategies including incentives for listeners to visit the ADRA HIV/AIDS Resource Centre (ARC). The ARC provides a youth-friendly environment, where information and support is provided to youth and the general public in relation to HIV/AIDS, including Voluntary Confidential Counseling and Testing (VCCT) referrals. A sexual health project within a faith-based NGO in a predominantly Christian country faces numerous challenges. One of these is the promotion, demonstration and distribution of condoms. During the Strategic Planning process a draft condom position statement was developed. However, this remains to be finalised as cultural and religious complexities are worked through. The Schools Project will continue its weekly classroom education sessions, targeting primary schools 11 – 13 year olds, rather than 15 – 16 year olds as in the previous project phase, given that recent research found sexual activity begins for most youth between 11 and 13 years of age[34]. This change in focus was also supported by anecdotal information from partner high schools indicating a need to shift the project focus to the primary school level. These education sessions will fall within a broadened, multi-strategy Health Promoting Schools framework[35] that will expand the partnership beyond that of only trained mentor teachers to engaging students' families and other interested community groups. Given partnerships is such a central element of health promotion[36,37], ADRA HIV/AIDS will reinvigorate the Reproductive and Sexual Health Church Committee (RSHCC), which provides opportunity for representation of church partners including those under SICA and SIFGA. This will strengthen and utilise church partnerships, encouraging the incorporation and legitimisation of sexual health promotion in their activities. The RSHCC will also contribute to maintaining ADRA HIV/AIDS' role to work with youth in these churches. RSHCC members express a broad range of views and approaches to addressing sexual health issues from extremely conservative to relatively liberal; harnessing the potential of this committee while continuing to share a commitment towards practical steps to prevent HIV/AIDS will continue to be a constant challenge.

Reflections from Evaluators

Sustaining the reorientation of the program with its expanded strategies and initiatives was one of the key issues for the evaluators, who were also involved in capacity building and strategic planning workshops. Having recommended a broader health promotion approach and introduced basic frameworks and theories, neither the consultants nor the team had the capacity to embed these within the timeframes of the consultancy period. This was despite the evaluators having an ongoing relationship with the Solomon Islands and some team members (for over 13 years in some instances). Although the consultants were aware of the capacity constraints and attempted to include capacity building strategies into the evaluation process short time-frames meant this was limited. Given the financial resources allocated to the evaluators from the project budget they were keen to deliver more material in the capacity building process however were aware of the team being overwhelmed by previous consultants who had delivered material that was so linguistically and conceptually foreign that the team were unable to apply any content to the Solomon Islands situation. Added to this was the knowledge of the reality of the social, cultural and religious complexities of a community based sexual health project in the Solomon Islands. This meant the reorientation process needed to be an ongoing and supported process, beyond the capacity of the short term consultants. Including someone within the team with health promotion and public health experience was perceived as a strategy to overcome some of these shortfalls of short term consultancies and provide mid term support for

To move beyond this, the AYAD volunteer encouraged the team to reflect upon and (re)frame the strategic planning data in a way that was meaningful.

[33]All churches belonging to the Solomon Island Christian Association (SICA) and Solomon Islands Full Gospel Association (SIFGA) have been invited to nominate youth to participate.

[34]Ministry of Health, Solomon Islands (2005). National HIV Policy and Multisectoral Strategic Plan 2005 – 2010. Solomon Islands Government: Honiara.

[35]International Union of Health Promotion and Education (2005). Health Promoting Schools Protocols and Guidelines. IUHPE: Paris.

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[38]Lipson, B. (2004). An 'Intimate Engagement': A Different Perspective on Personnel-Sending? INTRAC, Britain. URL: http://www.intrac.org/resources_database.php?id=27 (Accessed 29.3.06).

[39]Ibid.

the reorientation process.

Reflections from AYAD volunteer

The AYAD volunteer facilitated the opportunity for ADRA HIV/AIDS to learn and apply health promotion and project management frameworks together in partnership; 'knowledge sharing' has been the reality for both the AYAD volunteer and the team. The AYAD volunteer underwent a process of exploration and adaptation to the Solomon Islands context and ultimately together they developed a new knowledge base. The team provided positive feedback regarding the addition of an AYAD volunteer to the team: "…in fact we really appreciate and enjoyed working with the AYAD volunteer mostly for learning and knowledge sharing". The usefulness of the AYAD volunteer is supported by the literature, where it has been recognized that "there is something unique, and potentially highly valuable, about the facilitated process of an individual 'accompanying' an organisation from within"[38]. ADRA HIV/AIDS intends to invite a second volunteer upon the completion of the current 12 month assignment. ADRA HIV/AIDS' aim is the next volunteer will continue the capacity building process.

As with any capacity building exercise, the issue of sustainability must be acknowledged. Indeed, the literature, as well as the volunteer's experience and intentions, all reflect the importance of the AYAD volunteer's role being one of a catalyst within the Host Organisation throughout the journey of change so that the Host Organisation remains the principal actor[39]. However, the reality is often a tension between the volunteer acting as the catalyst and actually "doing the work". In the case of ADRA HIV/AIDS the recent vacancy of the Project Manager position left the AYAD volunteer filling that role throughout the recruitment process, compromising the AYAD volunteer's ability to partner with the team in the intended manner for reorienting the project. The team hopes to recruit a Project Manager with the capacity – as well as leadership skills – to support the team to sustain its reoriented approach and in effect enable ADRA HIV/AIDS to continue the advancement of contemporary health promotion in the Solomon Islands.

As with any capacity building exercise, the issue of sustainability must be acknowledged.

As an 'outsider' the AYAD volunteer came with particular approaches and beliefs that required adapting to the local Solomon Islands context. It was essential that from the beginning of the assignment the AYAD volunteer endeavoured to understand and respect ADRA HIV/AIDS' culture, spirituality and community as a whole. For the first three months the AYAD volunteer focused upon building relationships and understanding her new context, with a lesser emphasis upon 'outputs' than in previous work environments in which she had worked. This is not to say that three months is ample time to acquire cultural knowledge and relationship-building; in fact the team noted that this is not long enough time to familiarize one's self with the many different cultures and spiritual beliefs of the Solomon Islands[40].

However, many organisations sending paid personnel do not allow for this amount of time. This suggests the AYAD volunteer's volunteer status provided a degree of freedom that has been beneficial to the partnership with ADRA HIV/AIDS. Despite this, ADRA HIV/AIDS proposes that one year is a more realistic timeframe for a volunteer to "feel and learn what the reality is" from the national level to the grass roots level, with two years the recommended assignment length. An additional recommendation from the team is that the volunteer initially work with the Ministry of Health to gain a national perspective prior to joining ADRA HIV/AIDS.

Reflections from ADRA HIV/AIDS team

ADRA HIV/AIDS identified the importance of maintaining ownership over the planning and capacity building processes and that "we will learn from the project implementation… and modify (that) as… (we) go along… because of the different cultures and religious belief that (the team members) all have". ADRA HIV/AIDS further recognized that in order to maintain ownership of issues the team needed to address a commitment to HIV/AIDS prevention work and a desire to learn as implementation progressed. ADRA HIV/AIDS placed a high degree of importance upon team work in order to move forward and upon team abidance by ADRA HIV/AIDS Ground Rules[41] to enhance smooth functioning of work.

The HIV/AIDS team has had a positive response to the reorientation of the project, stating "it's a good approach… because… we are looking at long term sustainability for our children and for the future of this nation". A commitment to honesty and openness in utilising assistance to reorient the approach was shown. Given the non-confrontational interpersonal norms of Solomon Islanders, admitting and seeking assistance can prove an intimidating experience, particularly when that help will come from a 'white person'. Despite this, opportunities have been embraced to discuss and debate as a team the new directions and relative roles to achieve these (including how those roles needed to change). ADRA HIV/AIDS feels that previously it was aware of the various aspects of health promotion – in this case, the what – but the volunteer provided the catalyst to actually incorporate that into work – the how – including assisting with project management. The use of project plans for each team member – including Gantt charts for time management – facilitated ownership of particular project components as well as linking the application of health promotion to each team member. The team expressed "excitement to learn new things and envisage new outcomes" and particularly like health promotion for its multi-sectoral, "full community approach". ADRA HIV/AIDS hopes that by sharing its capacity building process through this paper it may assist not only itself to continue developing but also for other partners in the Solomon Islands and the Pacific region generally.

Conclusion

[40]This sentiment is supported by the evaluators who have worked periodically in the Solomon Islands since 1992, in blocks of up to 2 years at a time, and acknowledge their inadequacies in cultural knowledge and their need to constantly build and expand relationships.

[41]The ADRA HIV/AIDS Ground Rules contain rules of agreement around ARC house-keeping, communication (internal and external to the team), disciplinary procedures, services provided and time management.

This paper has shared the experiences of ADRA HIV/AIDS' recent reorientation moving beyond its initial awareness raising approach to incorporate broader population based health promotion frameworks, theories, strategies and assumptions. After recognizing the importance of this reorientation ADRA HIV/AIDS partnered with an AYAD volunteer to facilitate the process. Change management approaches through capacity building included developing a strategic plan and action steps, implementing project management systems (including M&E), encouraging independent learning, and providing managerial support where required. ADRA HIV/AIDS were aware of the complex social, cultural, religious, economic and political issues surrounding HIV transmission in Solomon Islands. Building capacity in health promotion enabled the team to incorporate these issues in HIV prevention programs. Throughout this process, ADRA HIV/AIDS has learnt change takes time and requires constant reflection. Drawing upon the AYAD volunteer's assistance and health promotion experience has proven useful. Knowledge-sharing and learning has been a mutual experience for the evaluators, AYAD volunteer and HIV/AIDS team and has occurred on many levels. The value of this in capacity building cannot be underestimated. By sharing this experience, the evaluators, AYAD volunteer and ADRA HIV/AIDS hope to continue to learn and move forward with this new approach, and that other partners in the Pacific may benefit in their capacity building activities for health promotion.

Building capacity in health promotion enabled the team to incorporate these issues in HIV prevention programs.

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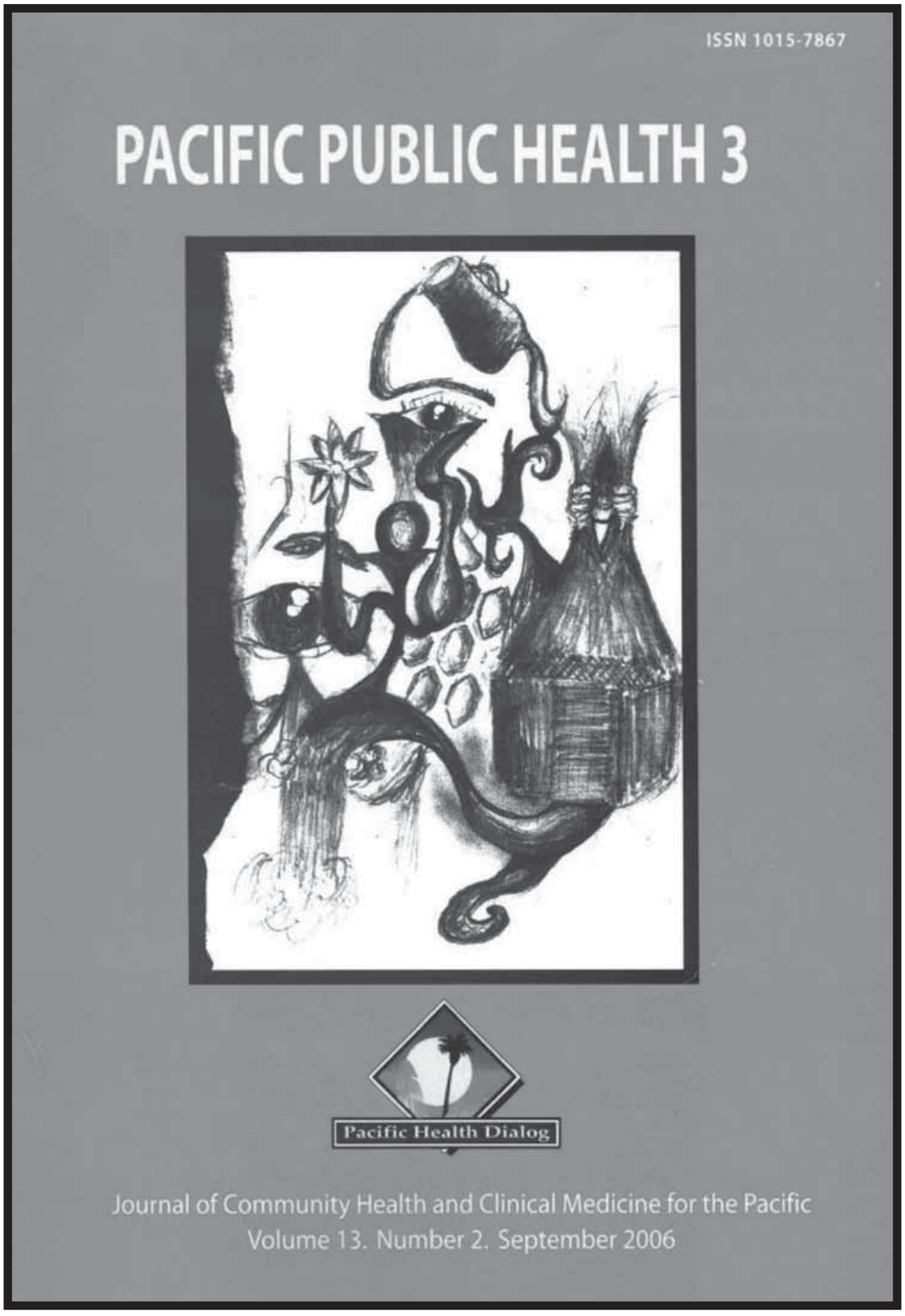
"How wonderful it is that nobody need wait a single moment before starting to improve the world."

- Anne Frank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Putting the Community at the Center of Measuring Change in HIV prevention in Papua New Guinea: The Tingim Laip (Think of Life) Mobilisation

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Abstract
This paper describes the national Tingim Laip (Think of Life) Mobilisation for HIV prevention that began in Papua New Guinea (PNG) in early 2005 and is funded by Australian Agency for International Development (AusAID) in cooperation with National AIDS Council. The Tingim Laip Mobilisation is a new and innovative intervention addressing the HIV and AIDS continuum through social mobilisation in 34 high risk settings throughout PNG. The paper describes (i) the principles and process of the Tingim Laip intervention, (ii) the participatory monitoring and evaluation mechanisms, and (iii) outlines some of the preliminary findings and outcomes of the intervention. The Tingim Laip mobilisation after one year of implementation is showing encouraging evidence of contributing to knowledge, attitude, and behavioural change in the epi-center of the epidemic in PNG.

Introduction

This paper documents the combined experience of a partnership between the National AIDS Council PNG (NAC), National HIV/AIDS Support Project (NHASP), Australian Agency for International Development (AusAID), Family Health International (FHI) and hundreds of 'change agents' in the network of Tingim Laip sites throughout Papua New Guinea (PNG).

In early 2005 the ***Tingim Laip Mobilisation**** (previously called the High Risk Setting Strategy) was born in PNG. This nationally supported, bottom-up communication for social change (CFSC) project takes an organic, dynamic and learning-by-doing approach to build a national network of communities (or 'settings') throughout the country that have been identified as 'high risk areas' or 'hotspots'. Each 'setting' is managed by a community-based 'site committee' who are provided with skills, technical support, and resources to plan, implement, and monitor and evaluate a locally relevant and integrated communication strategy.

This intervention was designed to build on previous efforts that had predominantly been based in 'modernization' and 'dependency' theories.

Currently there are 34 ***Tingim Laip*** sites around PNG, each managed by a voluntary community-based site committee comprising five to ten persons. The project reach is estimated at +170,000 persons (3.33% of the total PNG population) in sites that are at the epi-center of the epidemic.[†]

The ***Tingim Laip Mobilisation*** is simple and intuitive, yet complex and multidimensional. The overall approach draws on the wide experience of 'convergence' communication theories[1,2,3,4] recognizing the need for a multidimensional approach in the context of the complexity of HIV in PNG. This intervention was designed to build on previous efforts that had predominantly been based in 'modernization' and 'dependency' theories.

Important characteristics of the Mobilisation include:

Evidence Based: Selecting community 'settings' based on the epidemiological data and risk assessment of the setting, the willingness of gatekeepers to actively participate in the project, and the capacity of the site committee in the 'setting' to implement HIV prevention

*The brand 'Timgim Laip' is being patented. The term 'mobilisation' has been adopted to describe a strategic mix of campaign, community dialogue, and intervention to create a social mobilization.

[†]Project reach is estimated as follows: 34 intervention sites each with approximately 100 community volunteers (eg peer educators, champions, and gate-keepers) with each volunteer reaching out to 50 of the target population per year equaling total reach of 170,000 persons per year. The total population of PNG in 2000 census was 5.1 million therefore an intervention reach of 170,000 persons is approximately 3.3% of the most at risk population of the total population.

activities. 'Settings' in the network are diverse including; market places along highways, entertainment facilities, mining sites, other primary industry (such as sugar and oil palm), urban settlements, trucking and seafarer settings, and military bases. All of the Tingim Laip settings are characterized by high levels of mobility and rapid change.

Going Beyond Awareness: The intervention attempts to go beyond 'awareness raising' to effect change using a tool-box of theories and approaches to create individual, community-based, organizational and social change by being a catalyst to community dialogue on issues associated with HIV and its determinants. This emphasizes 'action oriented' communication that includes: interpersonal communication and peer education, participatory learning and action, advocacy, community mobilization, life skills development, micro-finance, women and youth focused interventions, and sports and music interventions. Communication messages support increased community dialogue on HIV as well as the socio-cultural and economic factors that fuel the epidemic such as: gender imbalances, drug and alcohol abuse, gambling, stigma and discrimination, poverty, patterns of sexual behavior, culture, mobility, and globalization.

Building Capacity as well as Supporting Local Know-How and Story Telling: The mobilisation focuses on building capacity of those spearheading the intervention (change agents) in each of the 'settings' at a number of levels from basic HIV to advanced behaviour change communication. A bottom-up approach is taken to communication priorities, strategies and messages. Local communities develop messages according to local needs, realities, interests, customs and languages with technical support provided as required. This approach helps to ensure that local meaning is given to messages helping to support attitudinal, behavioral and social change.

A bottom-up approach is taken to communication priorities, strategies and messages.

Developing Supporting Structures: The Tingim Laip sites are supported by a structure that ensures regular monitoring, provision of technical support, and motivation. Provincial Coordinators (Tingim Laip Coordinators) who oversee several sites provide regular support and solve problems as they arise. These coordinators are provided with additional support from the national level.

Integrating and Promoting Health Services and Products The four pillars of the project are its foundation with each 'setting' integrating and actively promoting: (i) full access to condoms; (ii) user friendly and accessible health services including sexually transmitted infection services; (iii) access to voluntary counseling and testing and (iv) provision of care and treatment services.

Branding the Mobilisation. *'The* ***Tingim Laip*** *logo'* (Figure 1) and branding help to unify the project under a single umbrella and maximize the opportunity to reinforce the message along the paths of people's mobility which follow the network of 'settings'. This ensures that project messages are reinforced as people move from setting to setting. This logo also contributes to reducing stigma associated with being perceived as a 'high-risk site' and contributes to positive and healthy-living holistic messages.

Fig. 1. Tingim Laip Logo

Innovation and Creativity. The mobilisation promotes innovation, creativity and thinking 'outside the box' which allows site committees to test new approaches and strategies ensuring communication messages continue to interest and motivate the target groups.

Partnership. Another important characteristic of the mobilisation has been the development of partnerships within and across the private sector, public sector, NGOs, women and youth groups, faith-based organizations, and a range of other community based organizations. The strong partnership with the private sector are particularly notable as these have strengthened the sites by providing resources and technical support, as well as increasing the importance of HIV/AIDS as a multisectoral development issue.

Putting the Community at the Centre of Measuring Change

Measuring change in the 'settings' has been challenging for the Tingim Laip Mobilisation. After considering different monitoring and evaluation models the Team concluded that participatory monitoring and evaluation (PM&E) defined as a set of principles and a process of engagement in the monitoring and evaluation endeavour where the process is at least as important as the recommendations and results contained in PM&E reports or feedback meetings[5] best fits the principles of the Tingim Laip Mobilisation. Emphasis of the PM&E is on empowering the community settings to decide how they want to measure change by providing those who are spearheading interventions with a tool-kit of PM&E methodologies and letting them decide what is most useful to their own interventions, capacity, and needs. This flexible and participatory approach motivated communities to drive the PM&E process as well as utilize the findings of PM&E to improve and refine communication strategies and messages through ongoing learning-by-doing.

At the outset, the core team (comprising a small group of technical persons at the national level) took a developmental approach to PM&E, starting slowly and building new dimensions based on capacity and demand as identified by

the settings. For instance, at the outset the site representatives developed basic project specific monitoring systems; however after 6 months the sites became more sophisticated and wanted more rigorous indicators to monitor and evaluate their work. This flexible approach promoted ownership and relevance of the monitoring and evaluation process for those driving the interventions and also resulted in more commitment to collecting and utilizing information for the process of continuous improvement. Unexpectedly, the cross-fertilization of the sites monitoring and evaluation indicators also resulted in considerable synergy of PM&E indicators across the network allowing the project to compare the performance of different sites.

At the time of writing this paper the multi-pronged Tingim Laip PM&E approach has predominantly focused on input and process monitoring with a combination of participatory social mapping, behavioral surveillance, collection of indicators according to the needs of each setting, Most Significant Change Stories and Case-Study reports, routine participatory process monitoring, and monitoring through information exchange and sharing across the network.

Social Mapping:

"Because you are working with our communities, we now feel responsible to do something, before we thought someone up there (pointing to the sky) would take care of us, now we know we have to do it for ourselves". Community Member

"Because you are working with our communities, we now feel responsible to do something, before we thought someone up there (pointing to the sky) would take care of us, now we know we have to do it for ourselves".

At the outset of the mobilisation Social Mappers were identified and trained in each of the sites to conduct a participatory assessment or situational analysis of their local setting. This included a mix of participatory methodologies such as: focus group discussions, participatory mapping, depth interviews, seasonal calendars, mapping hotspots, mystery client visits to health services, and observations. The mapping helped to create a deeper understanding by local communities of their settings including: relative importance of HIV in relation to top-of-the-mind concerns of the community, risk factors, segmentation of populations, sexual practices and behaviors, knowledge and attitudes on HIV, perception and utilization of health services, access to Sexually Transmitted Infection (STI) services, levels of stigma and discrimination, and preferred messages and channels of communication. This detailed understanding of local settings was the basis for planning integrated and strategic communication mobilisation in each of the settings. Social Mappers in each setting continue to play a key role in each site committee as technical advisers and resources for ongoing research in monitoring project progress and impact.

Behavioural Surveillance:

"We've seen voluntary testing and counseling [VCT] rise since the Tingim Laip in this community especially amongst youth, I went to the hospital and found 40-50% coming in for VCT". Change Agent

Although the social mapping provided a detailed understanding of each setting, the Tingim Laip communities later identified the need for quantifiable information to measure the scope of specific issues in their community and the quantitative impact of their interventions. Therefore a behavioral surveillance is currently underway to gain quantitative data on the scope of the issues and to form a baseline for final evaluation of the project. The surveillance also utilized a participatory approach, recruiting enumerators from the community to support community ownership of the results and to address cultural and language barriers.

Monitoring Indicators:

"People living positively [PLWHA] are starting to come out and be active in interventions". Change Agent

To assist with routine monitoring of each setting a number of indicators were identified through a participatory process building on the PNG National Strategy for HIV/AIDS. Indicators selected include: number of female and male condoms distributed; numbers of women and men trained in peer education; numbers of IEC materials distributed; and number of STI/Voluntary Counseling and Testing (VCT) services sought. From this list of indicators, sites identified which indicators they have the capacity to measure, gradually building additional indicators as capacity and interest permits. The monthly collection of these indicators provides feedback into project implementation in areas like: improved forecasting and planning of condoms, refining of communication strategies, and supports incentive systems for peer educators.

Most Significant Change and Case-Studies:

"I'm working with the mothers…we are having discussions with children… in the past we had these taboos…. Now we talk about these issues with the family…We have to teach the kids before they go to school". Mother

Another important PM&E process in Tingim Laip is the collection and sharing of most significant change stories and case-studies from the field. These stories and case-studies have helped to give a face to the epidemic. The stories describe examples of personal, community, organizational, and social change that has occurred as a result of community dialogue and the creation of local meaning to issues relating to HIV/AIDS.

Periodical Participatory Process Monitoring Reviews:

"I was so happy to hear about Tingim Laip a few months ago … Since 1995, I've been caring for [PLWHA] in my house ... when they are thrown out of their family, I put them in my family … I wash them … take care of them when they have diarrhoea …I help them improve their health with herbs and good food …And give them emotional support … each year more and more people come …I want to have a home based care centre …I haven't had any training … just what I know and God's help". Volunteer Home-based Care Worker

A small technical team conducts periodic participatory process monitoring visits to each of the sites. Most sites have been visited two or three times in the first year of the intervention. Visits include a participatory review of progress to date with the site committee, stakeholders and project beneficiaries to review: (i) the site's progress according to plan, (ii) the strength and capacity of the site committee, (iii) the monitoring and evaluation systems, and (iii) the community and social change occurring in the setting such as access to condoms and health services, attitudinal change, and changes in levels of stigma and discrimination.

Monitoring through information exchange and sharing across the network:

æIn the past 'awareness raising' was difficult for us to understand … people come and go. However, community change agents from our community can reach into the family and they are always here in the community ... change agents can talk in tok place [local language] about different parts of the body.. in ways that we can understand". Village Leader

Information exchange across the network is encouraged through regular meetings of site representatives who come together to share their experiences, critique one another's work, and learn from each other in symposiums, refresher trainings, and routine meetings. Study tours and exchange visits also support cross fertilization of ideas and innovations. Annually, awards of excellence are given to sites that demonstrate outstanding performance. This ongoing information exchange allows the project to measure progress of the entire network, as sites build capacity and become more sophisticated and independent in their communication for social change interventions helping to sustain and scale-up Tingim Laip activities.

Study tours and exchange visits also support cross fertilization of ideas and innovations.

Communities Are Starting to See Change

Although Tingim Laip is a young intervention, with most sites only having been active for eight months or less, many of the Tingim Laip sites are already reporting noteworthy change in their sites. The challenge for the project is to synthesize and systematically document success-factors and evidence of change given the limited resources available at the national level and the large scale of the intervention.

Success factors for Change:

"We can't rely on the government. We need to take control of this thing ourselves". Community Member

Whilst sites are performing at different levels depending on their capacity, most sites are able to identify changes that have occurred in their community and this motivates them to increase intensity and commitment to the project. An important success factor for the Project has been well selected sites and site committees selected in accordance with the Project criteria. Where this has not occurred, sites have found it difficult to mobilise because the community did not have commitment to the project or the site committee members were only interested in personal gains. Another success factor has been the site's ability to access training and other capacity building skills, mobilize resources through the small grant system and partnerships, and solve problems. Promoting access to resources for women and girls has also been a key success factor in order to adjust gender imbalances and promote women as active players in HIV prevention efforts. The ability of the site committee to actively engage vulnerable priority populations, particularly People Living with HIV/AIDS (PLWHA), and youth (both women and men) in decision making and managing interventions has been another indicator of success. Sites which have excelled have used creativity and innovation and a wide-range of strategies simultaneously to reach different populations through different communication channels. Another important success factor has been the ability of sites to access routine technical support from partners in public, private, faith-based and NGO sectors.

Change in demand for health products and services:

"I've distributed condoms for some years and I'm now noticing some changes, there is more demand and I believe people are really using them". Community based condom distributor

With the change agents actively promoting condoms, STI, VCT, and care and treatment services, there is already evidence of increased demand for these products and services. Many of the Provincial AIDS Councils have reported substantial increases in demand for condoms and services where Tingim Laip is active. Local STI services in most of the sites are also reporting increased number of clients utilizing their services as a result of the demand generated by the intervention. In sites that have adopted coupon or voucher systems to promote STI and VCT services the increase in demand is particularly notable. However, promoting VCT continues to be challenging for Tingim Laip sites, with only those with symptoms or who have engaged in high-risk behaviour accessing these services.

Testimonies of personal change:

"I have 2 children, my husband is not good and he left me, I hang out with friends we party on the weekends … we didn't used to carry condoms … When I met the site coordinator, I went to school for basic HIV/AIDS for a week … now I hand out condoms to all my friends and former clients …I'm not ashamed …They keep coming back … they know I'm the condom distributor … we have a saying … 'don't forget your 'life saver''… I know they are definitely using the condoms". Project beneficiary

There are now countless stories of personal change reported in Tingim Laip sites as a result of exposure to the intervention. These include individual change stories of: leaders who have become champions for HIV prevention in their community; individuals who have moved from high risk behavior to safe sexual practices; marriage reunification; men who are active in addressing gender imbalance in their community; and youth who were previously involved in "rascal" activities now becoming a positive force for change by integrating HIV prevention into sports and music interventions.

Evidence of community, organization, and social change:

"I was a womanizer. I had plenty of women and many wives. In 1972, I became an ambulance driver. We've been talking through awareness about HIV in our communities for some time but it wasn't getting through to people. Through this Project, we got some basic training, 13 people were trained in our community and now they are making a real difference by talking family to family. We have 9000 people in our community. We decided to build this big counseling centre in our community because this disease is very serious and we worry about the next generation. I'm offering my land to the Project free to establish facilities and that is a very big thing in our community for me to give away land …The situation is so serious here I'm giving up my land". Community Leader

There are also lots of stories of how communities and organizations have changed in Tingim Laip sites. For instance, one site attributed Tingim Laip to the reduction of alcohol abuse and associated violence in their community with women reporting that they felt safer to walk around and noticed less sexual violence. Other communities have put in place policies to reduce HIV risk such as changing closing hours for entertainment centers and markets. Other communities have noted that faith-based organizations are now more active in comprehensive HIV prevention efforts. Tingim Laip sites also report an increased constructive dialogue and understanding about HIV and other social issues that fuel the epidemic that had not been discussed previously in public. Work-based Tingim Laip sites report increased management commitment and action on issues relating to HIV including mainstreaming these issues into routine meetings and training. Another work-based Tingim Laip site moved from cash salaries for seasonal workers to banked salaries to reduce risk associated with access to excess cash. Young vulnerable women were supported by another Tingim Laip work-based site; which converting old drums into drum-ovens to support a small income generating baking business.

Other communities have put in place policies to reduce HIV risk such as changing closing hours for entertainment centers and markets.

Evidence of change through cross-fertilization of the network of sites:

"The biggest change we've seen in this community over the last 6 months is the personal change of the site committee members as a result of the basic HIV/AIDS education… we are also able to explain HIV more easily to others". Site Committee Representative

Exposure to innovation through networking and sharing has also inspired the adoption of new strategies and change across the network.

For instance, an innovation in one settlement on the outskirts of Port Moresby was influential in introducing youth-based sports and music activities in other Tingim Laip sites throughout the country.

Change takes time:

"I'm not educated but I can see … I notice that some things still haven't changed … Stigma and discrimination is still a big issue …people are ashamed to go to hospitals, … we need a home based approach ... people are afraid to go to the hospital". Site Committee Representative

"We still have to improve … I went down to the STI clinic and the records weren't there … no privacy in the clinic … And they give out condoms to married couples but not to single people". Social Mapper

Feedback from the community is also a constant reminder of the enormous challenge to change. For instance Tingim Laip sites continue to find it difficult to overcome community-based stigma and discrimination. Nevertheless, this does not seem to de-motivate change agents; rather it makes them more determined to strengthen their capacity, skill and strategies.

Conclusion

Whist Tingim Laip is a young intervention, it is already showing promising signs of playing an important role in bringing about attitudinal, behavioral, and social change required to tackle the HIV epidemic in especially vulnerable parts of PNG. The learning-by-doing approach coupled with PM&E has played a key role in the success of the mobilisation to date and is well suited to addressing the complexities of the epidemic in the context of PNG. The future challenges for the project will be: maintaining the momentum of existing sites; scaling-up the intervention to additional sites whilst maintaining the project integrity and quality; and more systematically documenting the PM&E of the network as a whole. It is encouraging to see that the strong critical mass that has already been developed by the project has generated a momentum of its own with reports of Tingim Laip type interventions already being emulated in different parts of PNG.

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"The power of accurate observation is frequently called cynicism by those who don't have it."

- George Bernard Shaw (1856-1950)

The Pacific OPIC Project (Obesity Prevention In Communities) – Objectives and designs

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Abstract

Background: *Evidence on how to reduce the increasing prevalence of youth obesity is urgently needed in many countries. The Pacific OPIC Project (Obesity Prevention In Communities) is a series of linked studies in four countries (Fiji, Tonga, New Zealand, Australia) which is designed to address this important problem.*

Objectives: *The studies aim to: 1) determine the overall impact of comprehensive, community-based intervention programs on overweight/obesity prevalence in youth; 2) assess the feasibility of the specific intervention components and their impacts on eating and physical activity patterns; 3) understand the socio-cultural factors that promote obesity and how they can be influenced; 4) identify the effects of food-related policies in Fiji and Tonga and how they might be changed; 5) estimate the overall burden of childhood obesity (including loss of quality of life); 6) estimate the costs (and cost-effectiveness) of the intervention programs, and; 7) increase the capacity for obesity prevention research and action in Pacific populations.*

Design: *The community studies use quasi-experimental designs with impact and outcome assessments being measured in over 14,000 youth across the intervention and control communities in the four sites. The multi-strategy, multi-setting interventions will run for 3 years before final follow up data are collected in 2008. The interventions are being informed by socio-cultural studies that will determine the family and societal influences on food intake, physical activity and body size perception.*

Progress and conclusions: *Baseline studies have been completed and interventions are underway. Despite the many challenges in implementing and evaluating community-based interventions, especially in the Pacific, the OPIC Project will provide rich evidence about what works and what does not work for obesity prevention in youth from European and Pacific backgrounds.*

Background

The obesity epidemic is rapidly increasing in both developed and developing countries[1]. Of particular concern is its hold in Pacific populations. The Pacific region has the highest rates of obesity in the world[2], yet the capacity to respond to the epidemic is very limited.

Prevalence rates for overweight and obesity (body mass index, BMI >25kg/m^2) are as high as 75% in Nauru, Samoa, American Samoa, Cook Islands, Tonga and French Polynesia[3]. The Pacific populations living in New Zealand also have extremely high prevalence rates (~80%) compared to the European population (~50%)[4]. The impact of obesity on non-communicable diseases, especially diabetes, is correspondingly enormous and increasing [1] with overweight and obesity ranked as the 7th leading cause of avoidable burden for 2010 and 2020[5].

Of particular concern is its hold in Pacific populations. The Pacific region has the highest rates of obesity in the world,[2] yet the capacity to respond to the epidemic is very limited.

Obesity prevention has, therefore, been recognised as a high priority by the World Health Organization (WHO) in the latest World Health Report[5], successive Pacific Health Forums and other Pacific Consultations[6, 7], and Australian and New Zealand health authorities[8-11] for at least the last 10 years. However, it is only recently that governments have been seeking evidence on what works and does not work for obesity prevention and unfortunately this is very limited. Systematic reviews of the literature have identified less than 30 intervention studies to prevent childhood or adolescent obesity[12, 13]. Most studies have been conducted in primary schools, have been short term and have had modest results at best.

Intervention studies which use optimal health promotion approaches of sustainable, multi-strategy, multi-setting

approaches[14] are, therefore, urgently needed and children and adolescents are obvious priority groups to target because they are still growing in height, they are more responsive to environmental changes, they are a 'captive population' within schools, and society in general has a fundamental responsibility to protect their health and provide healthy environments for them. Pacific children living in New Zealand already have the one of the highest rates of overweight and obesity in the world with a prevalence of about 60% in 5-15 year olds[15]. This contrasts with a much lower rate (about 20%) for contemporary Pacific children living in the islands[16]. However, after these youth in the islands leave school, they are likely to gain about 10-15 kg over 10 years estimated from the current weight difference between decades from recent cross-sectional studies, plus about another 10 kg being the secular trends of whole population weight gain of about 1 kg/year[3, 17].

For these reasons, the Pacific OPIC Project (Obesity Prevention In Communities) is targeting its whole-of-community intervention programs at youth (ages 12-18 years). In addition to determining the effectiveness and cost-effectiveness of the intervention programs, there are several other important environmental areas of research that the Pacific OPIC Project is addressing[18]. The first relates to the socio-cultural aspects of obesity. The beliefs, perceptions, attitudes, values and practices of the society in which one lives have a marked influence on individual behaviours. Identifying the socio-cultural factors that are associated with food and eating, physical activity and sedentary behaviours, as well as body size perceptions which might promote weight gain (ie are 'obesogenic') is fundamental to understanding the drivers of obesity. This information, in turn, can be used to inform the programs and social marketing activities needed to promote healthy eating and physical activity patterns.

The policy environments (legislation, regulations, rules, and policies) also determine behaviours and at a national level these include the trade, agricultural, marketing and fiscal policies as they relate to food. The Pacific Islands have particularly vulnerable food supplies because much of the food is imported.[19] Understanding the influence of these policies on the food supply and evaluating the impact of any policy initiatives is an important component of the Pacific OPIC Project.

The economic dimension of obesity is also extremely important to governments, particularly in the Pacific where the expensive medical and surgical treatment of the complications of obesity, such as diabetes and cardiovascular diseases, is such a large component of the health budget.[20] In addition, obesity and its related diseases reduce life expectancy, productivity, and quality of life – all of which can be counted in the total national burden of obesity.

The stimulus to combine community-based obesity prevention interventions with related socio-cultural, economic and policy studies into a comprehensive program of research across four countries (Fiji, Tonga, New Zealand, Australia) came from an initiative (the International Collaborative for Research Grant scheme, ICRG) by three research funding bodies: the Wellcome Trust (UK), the National Health and Medical Research Council (Australia), and the Health Research Council (New Zealand). The purpose of the ICRG was to link research groups in Australia and New Zealand with others in the Pacific or South East Asia as a way of increasing research capacity in those developing countries on important health priorities. Funding is for 5 years and the Pacific OPIC project was the only one within the ICRG which involved collaborations across New Zealand, Australia and the Pacific.

Objectives and overall design

The objectives of the Pacific OPIC Project are outlined in Table 1. This is an ambitious set of objectives, particularly given the existing low research capacity in the Pacific, the complexity of the task, and the short timelines needed to achieve whole-of-community action and cultural change. In many areas of research endeavour, high income countries are substantially ahead of low income countries in being

Table 1. Objectives of the Pacific OPIC Project in four countries – Fiji, Tonga, New Zealand and Australia

Component	Objectives
Intervention studies	**1.** To determine the overall impact of comprehensive, community-based programs on overweight/obesity prevalence in youth
	2. To assess the feasibility of the specific intervention components and their impacts on eating and physical activity patterns
Socio-cultural studies	**3.** To understand the socio-cultural factors (community attitudes, perceptions, beliefs, values) that promote obesity and how can they be influenced
Policy studies	**4.** To identify effects of national and international food-related policies on the supply of foods in Fiji and Tonga and how they might be influenced
Economic studies	**5.** To estimate the overall burden of childhood obesity (including loss of quality of life, disease impacts and health system costs) in each country
	6. To measure the costs (and cost-effectiveness) of the intervention programs
Capacity building	7. To Increase the capacity for obesity prevention research and action in the Pacific

able to answer the key research questions. In relation to obesity prevention, however, countries like New Zealand and Australia might have greater health research and public health expertise than countries like Fiji and Tonga, but the key research questions about how to prevent obesity in adolescents are currently largely unanswered in all countries.

The overall design of the Pacific OPIC Project is outlined in Figure 1. The interventions are the centre pieces and the analytical studies have been chosen to inform or add value to the intervention programs. The specific design features for each of the studies are outlined below.

Community intervention studies overview

Overview: The intervention studies all use a quasi experimental design with an intervention period of 3 years and a cohort follow up. All of the sites take a broad, community-building approach to the interventions and encourage active participation by the community and especially the youth themselves. The details of the development and implementation of the action plans are outlined in an accompanying paper in this journal[21]. There are some variations in the design of the baseline surveys and interventions between sites to accommodate local conditions and constraints (outlined below).

Sample size: The primary outcome variable of interest is changes in body mass index (BMI) with changes in BMI z-score, weight, and percent body fat being closely related secondary outcome variables. In the absence of available data on the standard deviation (SD) of changes in BMI over 3 years in these populations, we used cross-sectional data from a secondary school survey in Auckland which had a high number of Pacific participants (SD for BMI 5.22 kg/m^2, SD for weight 16.8 kg). Assuming a within-person correlation of 0.8, a sample size of 1000 each in the intervention and comparison arms of the study would give sufficient power (ß=0.8, α=0.05) to detect a difference in BMI of 0.41 kg/m2 or 1.3 kg. This was felt to be a reasonable balance between expected effect size and study feasibility and cost. The Auckland study showed no clustering effects by school once ethnicity was controlled for. To allow for dropouts, a target of measuring 1500 participants in each group was set but with the recognition that further recruitment of new entrants to secondary school could be measured in years 2 and 3 of the study to increase the person-years measured. Since Fiji has two large and quite different ethnic groups (Fijians and Indo-Fijians), the study aimed to measure 1500 participants in each ethnic group in both intervention and comparison groups.

Participants from these populations were recruited for the economic, socio-cultural and intervention aspects of the overall study.

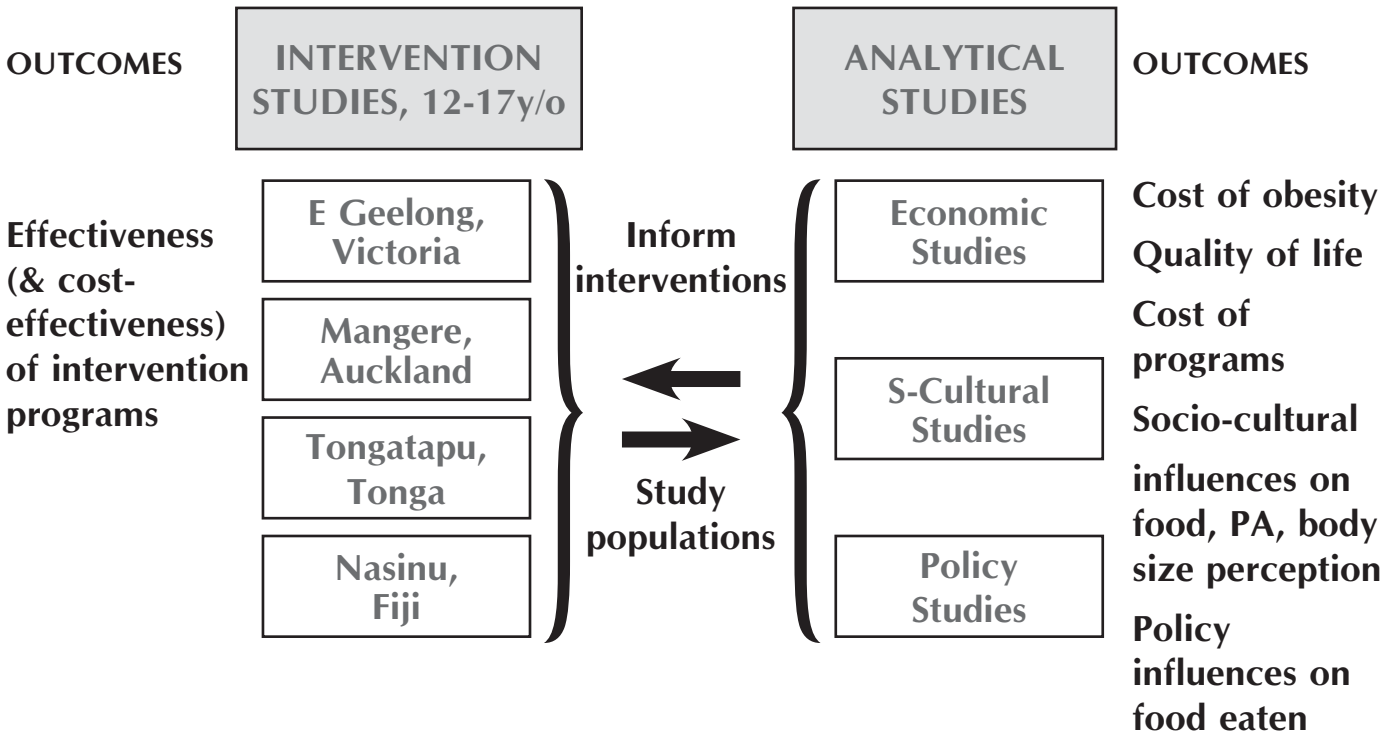
Choice of intervention and comparison populations

The criteria for the selection of the intervention populations are outlined in Table 2. Not all criteria were able to be met in each site. Participants from these populations were recruited for the economic, socio-cultural and intervention aspects of the overall study. The choice of comparison group varied by site but, it needed to be as comparable as possible (ethnicity, socio-economic status, likely trajectory of weight gain) and at a distance from the intervention site to minimise contamination.

Community intervention sites

Fiji site: The intervention site chosen was the Nasinu area on the main island of Viti Levu. This is a peri-urban area in

Figure 1. Overall design of the Pacific OPIC Project (PA is physical activity)



the corridor between Suva and the airport at Nasori. While this area is accessible to Suva and has sufficient numbers of youth who attend schools in the area and sufficient (if not too many) settings for interventions, it has some drawbacks. It is a large area which consists of a number of smaller, coherent communities to which people feel they belong. There are seven main high schools and over 80 churches, mosques, and temples in the intervention area, making it a huge challenge to achieve a high enough 'dose' of intervention across the whole area. The denominator population for the study is adolescents who are in Forms 3-6 at the high schools in the area. Many students living in the Nasinu area travel into Suva to go to school and they are not included in the evaluation, even though they may be exposed to some of the interventions. The comparison population is drawn from eleven schools with a similar mix of Fijian and Indo-Fijian students which are situated in towns on the other (west) side of Viti Levu.

Tonga site: The intervention communities in Tonga are three districts (Nukunuku, Houma, Kolonga) on the main island of Tongatapu and the denominator population is all school students from Forms 2-6 who live in these districts. Many youth, especially in Forms 5 and 6, attend schools outside the districts and this complicated the ascertainment and recruitment of participants. The comparison area is the islands of Vava'u where there are three high schools. Having an intervention site on the main island and the comparison site on the outer islands poses a threat to the validity when comparing the results because the secular trajectory of weight gain in youth in the two sites may be quite different. We will be able to get a sense of this from the weight gain trajectories from previous surveys conducted on these islands. The lower age group used for the Tonga surveys was required because the numbers of eligible youth in the districts were marginal for achieving sufficient power. In the end, fewer than 1000 participants were recruited for each intervention and control site.

Table 2. Criteria for choosing the intervention sites

Component	Criteria
Community	• Adequate population size of (accessible) adolescents (for Auckland, a high proportion of Pacific students)
	• Sense of community identity and cohesiveness among community members and organisations
	• Sufficient settings for interventions (schools, churches, community organisations, clubs etc)
	• Presence of 'champions' for change
Geography	• Well demarcated boundaries to define denominator population
	• Preferably within a single administrative area
Access	• Ease of access for research staff
	• Ease of access for other organisations

New Zealand site: The intervention site in New Zealand is Mangere in South Auckland where data from the Ministry of Education indicated that Pacific students make up a high proportion (59%) of the four high schools in the area. The main Pacific background is Samoan, with Cook Islanders and Tongans being the next largest groups. Two other schools from the South Auckland area were chosen as comparison schools because they had a high proportion of Pacific students (~50%) and were from the same two lowest decile rankings for socio-economic backgrounds of pupils. The denominator population is Years 9-12. In Auckland, the greater ethnic variation may contribute may contribute to a greater design effect, so the sample size is being boosted by measuring the new entrants to the schools (Year 9) in early 2006. Schools and churches are the main intervention settings and, while there is some sense of community within Mangere, a substantial number of Pacific residents attend churches outside the area.

Australian site: In the Barwon-South West region of Victoria (south west coast from Geelong to the South Australia border), a 'Sentinel Site for Obesity Prevention' has been established to support three whole-of-community demonstration projects for obesity prevention in under-5s, primary school-age children and secondary school age children. This last mentioned project is part of the Pacific OPIC Project and the intervention site is located over five schools in the East Geelong / Bellarine region, with the comparison group being a stratified, random selection of schools across the rest of the Barwon-South West region. The population is largely European descent and the average socio-economic status of the area is low. The intervention 'community' does not have a clear demarcation because on its western side it blends in with the rest of Geelong. Also, very few of the youth attend church so the schools will be the dominant settings for interventions. Participants were recruited for the study from Years 7 – 10 (equivalent to the Year levels from the other sites) from each of the schools.

Community intervention measurements

The measurements for the community interventions are shown in Table 3. These have been measured at baseline (2005-6) in the intervention and comparison communities and will be repeated after three years. Students leaving school before 2008 will be assessed prior to leaving school. Baseline questionnaires were programmed into Personal Digital Assistants (PDAs – hand-held mini computers) so that they could be directly filled in by the participants and the information electronically downloaded. Similarly, a program was written so that the body composition data from the bioelectrical impedance scales (Body Composition Analyzer BIA-418, Tanita Corporation, Tokyo, Japan) could

Table 3 Summary of the intervention study evaluation measurements

Component	Measurements	Comments
Outcomes	• Anthropometry (height, weight, waist) • Body composition (bioelectrical impedance)	Change in BMI or BMI-z score is the primary outcome but waist circumference or precent body fat may be more sensitive to change
Impacts	• Behaviours (eating and physical activity) • Knowledge (indicator questions) • Quality of life (PedsQoL, AQoL2) • Perceptions (body size, role models at home and school) • Environments (school audit)	Impacts relate to action plan objectives. All assessed through questionnaire using standard questions where possible. Audit tool used for school environments, supplemented by youth responses to role model questions.
Processes	**Formative evaluation** o Socio-cultural interviews o Development of action plan o Advisory, governance and management structures **Process evaluation** o Coordinator reports on activities o Cost data o Minutes, reports, action plans, presentations etc	Formative processes outlined plus establishing staff, premises etc took about 1 year. Preliminary interviews informed the ANGELO workshop and the action plan development. Coordinator reports are detailed enough to assess implementation issues (reach, uptake, barriers etc) and costs which include financial and time costs.
Capacity	• Community Readiness Assessment questionnaire • Follow up stakeholder interviews	Questionnaire at baseline and follow up, supplemented by qualitative findings

BMI is body mass index; PedsQoL is the Pediatric Quality of Life Questionnaire (ref); AQoL2 is the Assessment of Quality of Life questionnaire, version 2 adapted for youth; ANGELO is Analysis Grids for Elements Linked to Obesity;

be electronically downloaded into a laptop. The reason for maximising the electronic data entry (manual data entry was still needed for personal and some demographic data) was to reduce data entry load and errors, simplify the process of data cleaning, and allow for a rapid assessment of the data for analysis and return to the schools and communities

Socio-cultural studies

The groups that participated in the socio-cultural studies were adolescent boys and girls (13-18 years of age) from the following cultural groups: Tongan, Indigenous Fijian, Indo-Fijian, Tongans who reside in Auckland, and Europeans who reside in Barwon-South West region of Victoria. Data were gathered from these five groups at four different stages of the study, utilizing a range of methodologies. These stages are outlined below.

In-depth interviews. The purpose of these interviews was to explore socio-cultural influences on physical activity, eating, and the meaning of body size.

a) ***Preliminary interviews to inform the community workshop.*** Interviews with 6 males and 6 females aged 13 – 17 years from each of the five cultural groups identified socio-cultural factors for inclusion in the community workshop which developed the action plan (called the ANGELO workshop because it used an Analysis Grid for Elements Linked to Obesity for priority setting). They also informed the development of the socio-cultural indicator questions for the baseline questionnaire and the subsequent, semi-structured in-depth interviews. Interviews explored the socio-cultural factors that promoted or protected against weight gain. Interviews were approximately 60-90 minutes and conducted in the language of the participant's choice, audio-taped, transcribed and subjected to content analysis.

b) ***In-depth interviews.*** The purpose of these interviews was to explore socio-cultural influences on physical activity, eating, and the meaning of body size. Messages from parents, extended family, peers, coaches, and the media were explored in depth with 48 participants (24 males, 24 females) in each cultural group. The interviews in Fiji, Tonga and Auckland were conducted by interviewers of the same gender and nationality in the respondents' native tongue. All interviews were translated into English. Interviews were transcribed for analysis. The themes identified in these interviews have been used to inform the action plan and interventions in both Tonga and Fiji.

c) ***The Perceived Socio-cultural Influences on Body Image and Body Change Questionnaire.*** This is a validated scale for use with adolescents that evaluate sources of messages about the body, as well as the nature of these

messages, and their impact on both eating and exercise behaviours. The questionnaire was modified following the in-depth interviews to ensure relevance to each community and will be completed 300 boys and 300 girls in each of the cultural groups.

d) ***Body image distortion studies.*** This method assesses perceptions of the individual's actual and ideal body image. The extent of the discrepancies between what the person would like to look like, and how she/he actually appears, and how accurately she/he perceives his/her body will be assessed. A digital camera projects participants' own bodies onto a computer screen and participants adjust the electronic images on a part-by-part basis to indicate their ideal and perceived actual body. The methodology will be conducted individually with 24 males and 24 females from each cultural group. This phase of the study will determine the discrepancy between each individual's actual and ideal body, and determine how this varies between the different cultural groups.

e) ***Core socio-cultural indicator questions.*** Quantitative socio-cultural questions are included in the baseline and follow up surveys in the intervention and control groups in all sites. These questions will provide quantitative changes over time on the core socio-cultural themes around food and eating, physical activity and inactivity and body size perceptions.

Economic studies

The cost-effectiveness of the four intervention plans will be determined to inform decisions about optimal allocation of resources for obesity prevention. The intervention costing task is a time-consuming one which must be sustained over the three-year intervention duration, involves a large number of players, and has required onsite training and flexible data collection methods. Resource use associated with all intervention activities is documented through a diary approach, and access to records such as invoices, minutes of meetings, staff notes etc. Current practice as reflected by obesity prevention activities in the comparator schools is also being costed. Resources will be valued in terms of local currencies in real prices for the 2005 reference year. Costs will be analysed by expenditure category and key design features to identify cost drivers.

Two quality of life instruments are being administered at baseline and follow-up to facilitate description of the health burden of adolescent overweight and obesity and as an outcome measure in a cost-utility analysis of the interventions. The latter will enable a comparison of the efficiency of obesity prevention with a broader range of health care interventions. As the AQoL-2 (Assessment of Quality of Life) was developed for Australian adults,[22] it has required modification for adolescent use, cultural validation through onsite focus groups at each site, and recalibration of the utility weights. The latter required the completion of ten 'time trade-off' scenarios by samples of 60 adolescents in each site, conducted on a small group basis in the intervention schools. The PedsQL, a pediatric general health profile instrument (module for 13-18 years) is also being used to enhance the credibility of quality of life measurement in the OPIC study[23].

In the final component of the economic studies, the cost and outcome datasets will be brought together with local data on the prevalence of obesity-related diseases and their costs in an economic model that will describe the disease burden and health care cost implications of adolescent obesity. It will also predict the costs and benefits downstream as a result of the interventions through their capacity to reduce obesity-related disease.

Policy studies

The food supply in many Pacific countries is in a vulnerable position because so much is imported and the regulatory environment is not very strong. There are potential problems with food insecurity, food safety, food quality, labelling and food marketing practices[19]. Trade and agriculture policies can have a significant effect on the food supply and there is also the potential for domestic laws to be used to improve the healthiness of the food supply in Pacific countries[24]. The Pacific OPIC project aims to assess policy proposals that could be or will be instituted and to determine their impact on the food supply. Examples of such policies are a potential quota on the importation of mutton flaps and turkey tails into Tonga, the implementation of a 10% tax on soft drinks in Fiji and the institution of a goods and services tax in Tonga.

Trade and agriculture policies can have a significant effect on the food supply and there is also the potential for domestic laws to be used to improve the healthiness of the food supply in Pacific countries[24].

Capacity building in Pacific research

In the Pacific, six staff on the OPIC project or from the Fiji School of Medicine are undertaking postgraduate studies (mainly Postgraduate Diploma in Public Health) and have used the OPIC study for their research unit. Staff in Fiji and Tonga have been able to participate in four workshops on social marketing, two on epidemiology and statistics using Epiinfo, and others on project management, writing papers, and health promotion. Several Pacific staff also presented their data at conferences – the Pacific Medical Association conference in Tonga, 2005 and the Community-based Obesity Prevention conference in Geelong, 2006. Investigator meetings are usually held three times a year in Fiji or Tonga and these are used as an opportunity to upskill the Pacific team members in aspects of research.

In New Zealand, five Pacific graduate students, funded by the OPIC project, are currently enrolled to complete PhD theses or Masters of Public Health degrees at the Pacific research centre at the University of Auckland. These students, along with a Pacific principal investigator, will form the nucleus of a Pacific health research centre at the School of Population Health and have the capacity to lead the development of research on issues affecting the health of the Pacific community in New Zealand.

The research activities for the Pacific OPIC project which are based in Australia include the Geelong intervention site, the socio-cultural, economic, and policy analyses and these involve Deakin University, The University of Melbourne and Monash University. These increased research links between these Victorian universities and the Pacific countries may continue to contribute to capacity building in the Pacific beyond the life of the project.

Progress to mid 2006

The formative stages of the project included the identification of the intervention sites and the engagement of the communities, recruiting staff and establishing the research and administrative structures, development and testing of research instruments, undertaking the preliminary socio-cultural interview, training staff, undertaking an ANGELO workshop and developing the draft action plan. This took at least a year, sometimes longer, to implement from mid 2004. Baseline data collection started at various times within 2005 in each of the sites and was completed by mid 2006 in all sites. The analytical studies started in 2005 and will continue through to 2008.

The health promotion activities started in 2005, but again this varied by site because of the competing activities of the baseline measurements and the different levels of health promotion capacity in each country. Training programs in health promotion and social marketing were included for staff and each site capitalised on the surveys and start of interventions to launch their projects and to gain some publicity for them. The background to the health promotion activities and the action plans are outlined in more detail in the paper by Schultz et al.

Lessons learned to date

Even at these early stages, many lessons have been learned along the way. Large, community-based intervention programs come with many challenges, mainly due to their complexity, the multiple partners involved, the substantial capacity building needs, and the time needed to orient all the related organisations towards common goals. The lead times are long and the efforts needed to create the trust and partnerships are substantial, but in the end, it is these relationships which provide the backbone for the programs and their sustainability. Partners need to take the time to understand each others' agendas and to have the flexibility to be able to create the maximum synergies for the community while minimising the organisational politics and barriers.

Champions who are influential within the community, organisations, and governments are also crucial. They can create those vital visions and aspirations that inspire people to make changes, and they can open the doors to decision-makers and pave the way for progress.

The complexity of a whole-of-community intervention program is further layered by the research and evaluation components. Each community is different, and this requires substantial flexibility in designing the evaluation and managing the burden and rigour of the measurements. There are many trade-offs between what would be ideal for science and what suits the community. For example, schools are heavily constrained in the time they can allocate to the assessment process, since this takes up the time of staff and students. Often a balance needs to be found between these realities and the tightness required of the scientific assessment. There is a tendency for scientists to over-measure and so questionnaires get expanded, sample sizes get increased, measurement frequencies increase, measurements become more detailed, and so on. It is a high risk in these types of programs that the efforts involved in measurement (including all the ethics applications for each component) outweigh the efforts put into the interventions.

These challenges for intervention and research are more than doubled in Pacific countries.

Large, community-based intervention programs come with many challenges, mainly due to their complexity, the multiple partners involved, the substantial capacity building needs, and the time needed to orient all the related organisations towards common goals.

The capacity for health promotion and research in the Pacific is already low (mainly due to limited financial resources and few trained health professionals in the area) and these projects stretch those resources even further. Unlike Australian and New Zealand research institutions, the Pacific institutions like the Fiji School of Medicine get no linked overheads and infrastructure costs for research from government.

Conclusions

The Pacific OPIC project is a large, complex health promotion and research endeavour across four countries. The partnership model between tertiary institutions in Pacific, New Zealand and Australia allows substantial, high quality research projects to be conducted in Pacific countries where the existing public health and research capacities are low. The outcomes of the Pacific OPIC project will guide future obesity prevention efforts in all four countries, and this will be particularly important in the Pacific region where obesity prevalence rates are the highest in the world and obesity complications are a huge burden on health care resources.

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The Pacific OPIC Project (Obesity Prevention In Communities): Action Plans and Interventions

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Abstract

Background: *The Pacific OPIC Project (Obesity Prevention In Communities) includes whole-of-community intervention programs in four countries (Fiji, Tonga, New Zealand, Australia) aimed at reducing the prevalence of overweight and obesity in youth.*

Development of Action Plans: *At each intervention site, preliminary interviews were conducted with youth to identify the potential socio-cultural barriers and facilitators to healthy eating and regular physical activity in order to attain and sustain a healthy body size. This and other information was presented at a 2-day workshop with community stakeholders, including youth. The participants then prioritised the components for a draft action plan which was later consolidated through further community consultation.*

Action Plan objectives: *Each action plan had two overall aims: to build community capacity and to promote healthy weight. The first three objectives in each action plan were on capacity building, social marketing messages, and evaluation. Next were a set of four to five behavioural objectives with associated strategies involving programs, events, social marketing and environmental change. Lastly, each site had one or two innovative or developmental objectives.*

Progress: *Interventions began in all sites from 2005, with the action plans guiding implementation priorities. The initial behavioural objective for targeting in Fiji was eating regular breakfast and meals throughout the day, for Tonga it was physical activity, and for Australia and New Zealand it was increasing water consumption and decreasing consumption of sweet drinks.*

Conclusions: *The action plans have provided the basis for community engagement in the project, the guide to the implementation of activities and the template for the evaluation plan.*

Introduction

Overweight and obesity is increasing in most countries but prevalence rates are particularly high and increasing rapidly in Pacific populations. While in adults, the prevalence is very high for Pacific populations both living in the Pacific or in New Zealand, for young adolescents , it is much higher in New Zealand. It is likely that socio-cultural factors play a large part in the development of obesity. Any intervention programs, therefore, need to take into account the main behaviours and underlying socio-cultural factors that are contributing to obesity.

Health promotion action at a community level needs to become embedded in the organisations working in that community and to ensure that the community owns and embraces the action. The challenges are considerable, particularly in achieving a sufficiently high and sustainable 'dose' of intervention and evaluating the process, impacts and outcomes to a sufficiently high standard given all the constraints associated with such projects. While these challenges are recognised, the problem of obesity, especially in Pacific populations, needs to be addressed at all levels – community, national, and global.

The Pacific OPIC (Obesity Prevention In Communities) project is a 4-country study funded by the Wellcome Trust (UK), the Health Research Council (New Zealand), and the National Health and Medical Research Council (Australia) over 5 years (2004-2009) which targets young people aged 12-18 years. The four community intervention studies described here are accompanied by supporting analytical studies of socio-cultural determinants, economic analyses and policy analyses (for full description, see Swinburn, et al[10]. The intervention studies are quasi-experimental with control communities for each study. The intervention period

is 3 years. The interventions aim to have a balance across nutrition and physical activity promotion and place a high priority on capacity building.

The aim of the current paper is to describe the general processes adopted by the Pacific OPIC Project to develop plans of action. These plans focus on the elements required for planning, formulating and coordinating interventions and conducting the evaluation process.

Intervention Sites

The intervention community chosen in Fiji was Nasinu, a peri-urban area along the corridor between Suva and the airport at Nausori on the south east side of the main island of Viti Levu. Seven secondary schools in Nasinu are the primary setting for the intervention and the ethnic mix of the students (about two-thirds Indigenous Fijian and one-third Indo-Fijian) is reflective of the area. Church/religious groups and homes are also important settings for intervention because of their influences on adolescents' behaviours.

The intervention communities in Tonga (Nukunuku, Houma, Kolonga) primarily consist of three districts; a district is determined by geographical location and size of the population. Geographically, Houma and Nukunuku districts are located on the Western side of Tongatapu while Kolonga is located to the East. Each district is made up of a group of villages. Each district has a health centre and youth groups and women's groups are common features of the villages. Only about 20% of young people (n=331) attend the schools located within the intervention communities. The majority go to schools that are located outside the intervention communities, predominately in Nuku'alofa – the capital of Tongatapu. Consequently, a number of these schools have been selected for intervention.

It is likely that socio-cultural factors play a large part in the development of obesity.

In New Zealand, the intervention community is based in Mangere, South Auckland. Mangere has a youthful and culturally diverse population; 40% of the population are aged under 20 years and approximately 60% represent Pacific ethnicities. Four secondary schools were selected as the primary intervention sites but a number of churches were also identified as important intervention settings after the baseline data collection identified the churches which were most commonly attended by the students.

The intervention community in the East Geelong / Bellarine Peninsula in south Victoria includes five intervention schools which are the main settings for intervention. The community is predominantly European, with small pockets of other ethnic communities within the intervention site, and the average socio-economic status of the area is low. The potential for interventions in community settings other than schools is less at this site since few students attend church. Further details of the definitions of the denominator populations for the intervention and comparison groups at all sites are described in the accompanying paper by Swinburn, et al[10]

Planning and Community Engagement Process

Since the intervention communities were purposively chosen, a process of community engagement and support preceded action in each site.

Gaining communities support for and commitment to the project

In Fiji, the Ministry of Education officially wrote to all principals of secondary schools within the intervention area and the comparison schools expressing its endorsement and support. Contacts with secondary school principals, community/church/religious leaders, and local town councils were made to arrange for a series of meetings with teachers in schools, community and church groups, and local town councillors. An intensive awareness programme followed involving presentations on what the project is about, who are involved, the benefits of the project for the school students and the wider Nasinu community (and the potential benefits to the country) and to seek their support as partners.

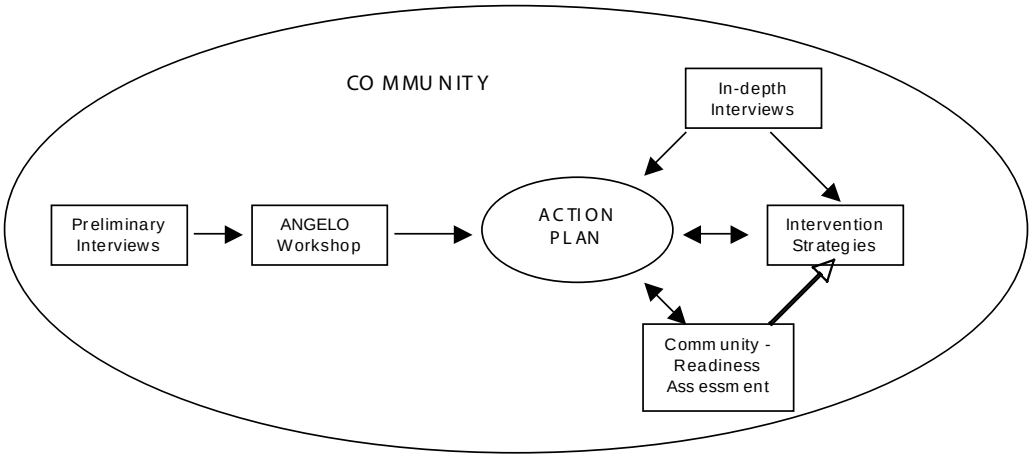
In Tonga, initial conversations began with the Ministry of Health staff at health centres, town officers and church ministers. Meetings were held with other stakeholders including Ministry of Health Head Office and its staff, the Health Promotion Unit, the Ministry of Education, education administrators of church schools, school principals, youth leaders, women's groups, and key village people. Research staff also attended meetings of existing health programmes as entry points into the communities.

In New Zealand, the principal investigators met with each of the principals at the four intervention schools to discuss the purpose of the project and gain the school's support. The principal investigators also received letters of support from the Ministry of Health. In Australia, initial consultations and planning began with the Department of Human Services and with the key stakeholders within the intervention area regarding the appropriateness of the location for the project. The research team met with each of the principals of the five schools to discuss the project, logistics, timeframe and expected outcomes.

Developing the draft action plans

Figure 1 describes the model of the OPIC community interaction process. The steps taken to develop the action plans were conducted within the context of the communities; key community members and stakeholders were involved in all aspects of the process.

Figure 1. OPIC Community Interaction Model



Phase 1 – Preliminary assessment of socio-cultural factors

Preliminary interviews were conducted to determine the perceptions of 12-18 year olds in terms of three themes: food and eating, activity and inactivity, and preferred body size. The description of how the interviews were conducted is described elsewhere[10]. Findings from the interviews informed and shaped the community workshops and baseline questionnaire and indicated that youth:

- knew about healthy food and drinks,
- often buy junk food with spending money that was not monitored by adults,
- identified mothers as messenger about food while fathers provided more messages about exercise,
- thought boys had more freedom than girls to exercise and in Fiji, Indo-Fijians prioritise study over exercise,
- identified media, peers and sports stars as important messengers relating to body size, shape and muscularity.

The findings of the socio-cultural interviews were included in the materials developed for the community workshops for the four sites.

Phase 2 – Community workshops to develop the draft action plans

Once the community consultations and preliminary socio-cultural studies took place, each site organised a community workshop with key stakeholders to develop a draft action plan. The community workshop used the ANGELO framework based on an Analysis Grid for Elements Linked to Obesity[11]. The original ANGELO framework centred on obesogenic environments but this was augmented by identifying potential behaviours for targeting, knowledge and skill gaps to fill, in addition to environmental barriers in the homes, schools, churches and communities that needed to be addressed. In brief, all of the elements were informed by the preliminary socio-cultural interviews prior to each workshop (approximately 15-20 potential behaviours, 15-20 potential knowledge and skills gaps, and 10-25 environmental barriers in each of the settings). The environmental barriers were classified as physical (what is or isn't available), economic (what are the financial factors), policy (what are the rules) and socio-cultural (what are the beliefs, values, attitudes, perceptions and community practices).

At the 2-day ANGELO workshop, students, teachers, and people from the communities and related organisations were updated on the issues related to obesity and available local data on the problem. The participants were then taken through a process of prioritisation of the various elements. Individuals first checked and altered the elements if necessary and then scored each element for importance and changeability. Group aggregate scores were combined to identify the priority behaviours, knowledge and skill gaps, and environmental barriers that relate to obesity. From these priority elements, a draft action plan was developed by the end of the two day workshop.

The strategies should be congruent with the stage of readiness and be culturally appropriate (the latter was addressed through the in-depth socio-cultural interviews).

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The action plan is expected to be used as a living document which evolves throughout the project. This provides structure for the interventions as well as content for some of the process evaluation. Brief descriptions of the community interaction process for each site and sample action plans are described below.

Fiji: 'Healthy Youth Healthy Communities'

ANGELO Workshop

A two day ANGELO workshop was conducted in August 2004 to develop a plan of action for intervention within the Nasinu community. Representatives from schools (students, teachers, Parents and Teachers Association, and School Board), church religious groups within the Nasinu area, organisations operating within the intervention area, and leaders from the three major settlements in the intervention area participated. The workshop resulted in the completion of a draft action plan and behavioural objectives to guide the interventions. The behavioural and innovation objectives of the action plan for the Fiji *Healthy Youth Healthy Community* project are described in Table 1.

Table 1. Behavioural and innovation objectives of the Fiji 'Healthy Youth Healthy Communities' Action Plan1

Aim: To improve the health and wellbeing of individuals and strengthen the Nasinu Community through healthy eating and physical activity

Objectives	Key Strategies
1. To significantly reduce the proportion of adolescents who skip breakfast on school days.	• Promote breakfast with students and parents – pamphlets & school assembly morning talks
	• School canteen providing breakfast
2. To improve the healthiness of food at school by significantly decreasing the consumption of high sugar drinks and promoting the consumption of water and by significantly increasing fruit and vegetable consumption	• Develop school policies for canteens to support water, fruit and vegetable consumption
	• Curriculum development with Home Economics and Agricultural Science
3. To significantly decrease the consumption of energy dense snacks and significantly increase consumption of fruit as afternoon snacks	• Social marketing [include fruits (& vegetables) for snacks and benefits of F & V; what constitutes healthy snack
	• Student information on healthy snacks, F & V snacks
4. To significantly increase the proportion of adolescents living within walking distance to school to walk to and from school with a sense of safety	• "Walking buddies"
	• Road safety skills
5. To support physical education teachers to conduct physical education classes effectively	• School policy on physical education classes
	• Partnership with organizations to provide equipment such as hoops, ropes, other sports equipment
6. To significantly increase the amount of active play after school and on weekends and significantly decrease the time spent watching TV and playing on computers or electronic games	• House rules on screen time and outside play time
	• School walkathon
7. To develop a program for promoting healthy eating and physical activity within churches, mosques, and temples	• Food Preparation Skills
	• Budgeting skills

[1] Standard objectives on capacity building, social marketing messages and evaluation not shown

Choice of Name

During a social marketing workshop conducted in early 2005, participants developed a list of possible names for the Nasinu intervention. These names were reviewed by community members during focus groups to identify the most commonly selected one. The name *(Healthy Youth Healthy Communities)* and ideas for graphic representation were further developed by a graphic artist and retested with a community group before the logo was finalised.

Tonga: 'Ma'alahi Youth'

ANGELO Workshop

The ANGELO Workshop for the Tonga intervention took place in March 2005. Participants included adults, young people and students from the three intervention communities. The resulting behavioural and program objectives of the action plan for the Ma'alahi Youth project are described in Table 2.

Table 2. Behavioural and innovation objectives of the Tonga 'Ma'alahi Youth' Action Plan1

Aim: To increase the capacity of Nukunuku, Houma and Kolonga districts to promote healthy eating and regular physical activity amongst the youth and reduce the rates of overweight and obesity.

Objectives	Key Strategies
1. To significantly increase the proportion of youth who eat healthy breakfast on school days.	• Promote eating breakfast before school for students
	• Parent, teachers and student information and motivation
2. To significantly increase the proportion of youth who eat (a healthy) school lunch	• Develop policies for canteens and food vendors
	• Parent, teachers and students information and motivation
3. To significantly increase the consumption of vegetables and fruits for youth	• Develop programs for growing vegetables and fruits
	• Parents and youth information and motivation
4. To significantly increase the participation in physical activities and informal activities (especially for girls)	• Village walking groups
	• Keeping the village clean program
5. To significantly increase the participation in organized sports, especially for girls	• Develop policies promoting mandatory PE at schools
	• Community indoor and outdoor facilities
6. To promote water consumption and significantly reduce the consumption of sweet drinks.	• Introduction of water policies in intervention schools churches, celebrations
	• Parents, teachers, students information and motivation
7. To develop a programme where village and church leaders are champions for healthy eating and regular physical activity.	• Champion program for key people as role models.

[1] Standard objectives on capacity building, social marketing messages and evaluation not shown

Choice of Name

Literally translated, "Ma'a" means clean and "Lahi" means big. The word Ma'alahi was coined by young people as a slogan to describe something beautiful, neat, tidy or clean. At the inception of the National Non-Communicable Disease (NCD) project by the Tonga Ministry of Health, 'Ma'alahi' was used as a social marketing slogan for promoting physical activity and other NCD related messages. The Tongan intervention communities adopted Ma'alahi, to link it to the National NCD programs; the addition of the term "Youth" indicates the target population of the project and distinguishes it from the NCD project.

Mangere: Living 4 Life

ANGELO Workshop

The Mangere ANGELO workshop was held over two days in August 2004. Attendees included representatives from schools (students and staff, including teachers, counsellors, health providers), the National Heart Foundation, the local city council, the Ministry of Health, the Pacific Island Food and Nutrition Action Group, Counties Manukau District Health Board, Counties Manukau Sport, and local area health providers. The workshop resulted in the completion of an action plan and behavioural objectives to guide the school-based interventions.

Choice of Name

Students from the intervention schools participated in a competition to generate a name for the Mangere intervention. The 'Living 4 Life' name was chosen by the students and agreed upon in consultation with the staff and students from all four schools.

East Geelong: 'It's Your Move!'

ANGELO Workshop

Students from the five secondary schools attended the two day ANGELO workshop in November 2004, which included the process and development of the interventions within their schools and the community. An innovative objective was included as a result of conversations with the youth, which was to improve at an individual level, their overall body image through education and awareness raising programs. At the workshop, the framework developed by a similar project ('Be Active, Eat Well') already underway in a nearby town of Colac was adapted for use in 'It's Your Move!'. Further development of the objectives and strategies included extensive development with the Reference Committee (which included the principals), the Project Management Team (including the School Project Officers) and the youth of the intervention schools through various workshops and focus groups.

Choice of Name

In early 2005, students from two of the intervention schools participated in a focus group to design and develop the name of the project ('It's Your Move!'). The title of the project was then given to teachers of Graphic Design, who further developed it and gave the design brief back to the students within their classes. Upon completion, teachers submitted their students work to a local graphic artist, who selected an image to develop. Upon selection of the image, the students worked closely with the graphic artist to refine and colour the final image.

Community Engagement and Intervention Strategies

Once the Action Plans were drafted, key stakeholders were again consulted to determine the types of strategies that were important and appropriate for their communities. In Fiji, two working groups were formed to implement the action plan. The first was the Local Steering Committee whose membership comprised of representatives of all major stakeholders at Ministerial levels (Health, Education, Women), school focal points for the Healthy Youth Healthy Communities project, local town council, and health centres in the intervention area. The brief of this committee is to advise and support the project team with implementation and act as a link between their respective organisations and the project staff. The second group comprised the individual School Implementation Committees for each of the intervention schools. The members of the School Implementation Committees include teachers, students, school administration, and canteen managers. The School Implementation Committee's brief is to support the project by implementing the action plan in their school setting. The Committees meet fortnightly on their own and with a member of the Healthy Youth Healthy Communities team at least monthly to plan and monitor project activities.

The initial behavioural objective targeted by the Healthy Youth Healthy Community intervention addresses the issue of students missing breakfast.

The initial behavioural objective targeted by the Healthy Youth Healthy Community intervention addresses the issue of students missing breakfast. Schools are using multiple strategies to encourage students to eat a healthy breakfast. Intervention strategies include social marketing through pamphlets targeting students and parents; promotion of breakfast by students during parent interview days; school canteens opening early to sell breakfast (sandwiches) before school starts; and education through skills development for students in time management.

In Tonga, the Ma'alahi Youth Project team has linked up with the Healthy Islands Committee in each district, village committees, youth groups, and church groups to work towards implementing the intervention. Other linkages are currently being explored with other community development projects already operating in the communities to ensure sustained community action. The Ma'alahi Youth Project team members are in the process of identifying key people in each village to act as role models and to help drive the project forward.

The initial behavioural objective addressed by Ma'alahi Youth targets physical activity. Strategies to promote physical activities include weekly village walking groups; a 'keeping the village clean programme'; and aerobics for all youth and targeted programmes for mothers and daughters.

In Mangere, once the action plans were drafted, school staff and students became more actively engaged in determining the types of strategies that were important and appropriate for their school. During the first year of the intervention, an inter-school committee was organised and met monthly to allow for support and collaboration between schools. The inter-school committee had representative staff and students from each school. Simultaneously, Student Health Councils (SHC) were organised in each school for students interested in being involved in supporting the objectives of the project. Students participating in the SHC meet weekly within their school and once per school term as a collective with SHC members from other intervention schools. SHC members receive education and training in issues relevant to obesity and nutrition and are responsible for promoting the objectives of the project and initiating change within the schools. The SHC consult with key school staff and initiate intervention strategies that are appropriate for their school. Additionally, community organisations interested in physical activity, nutrition or obesity have been working with the schools to promote the objectives for the project. Examples of the types of community organisation engaged with the intervention schools include the National Heart Foundation, Counties Manukau Sport, Counties Manukau District Health Board and local area health providers.

The initial objective targeted by the Living 4 Life schools was to decrease consumption of sweet drinks and increase consumption of water. Examples of intervention strategies to achieve this include: social marketing campaigns developed by students; distribution of water bottles to students and staff, education through school newsletters and parent evening sessions, installation of new water fountains in strategically placed locations in the schools, and implementation of a school water policy.

In Australia, upon the completion of the ANGELO workshop, a teacher within each of the intervention schools was appointed as a School Project Officer to coordinate the running of the project within their school and work with the students to improve the environment, curriculum and overall health of young people. Students who were initially invited to attend the ANGELO workshop, were asked to extend their involvement in the project to become the Ambassadors/ role models for It's Your Move! The School Project Officers received formal training in Social Marketing in September of 2005. At this workshop, they gained the necessary skills to use social marketing communication to change attitudes, behaviours and beliefs of young people and their communities. For student input and development

of the action plan, a workshop was held with students from the five intervention schools to work through the process of developing interventions in their school. Student Ambassadors have also received media training facilitated by the Department of Health to ensure their messages are delivered more effectively. Concurrently, local organisations are reorienting their priorities to include obesity prevention and local and state governments have also been proactive in obesity prevention within Victoria.

It's Your Move! primarily focused on the initial objective of increasing water consumption and decreasing consumption of sweet drinks. Intervention strategies to promote water consumption include: social marketing through water bottles, screen savers and posters; educations through the school curriculum and professional development with teachers and staff; increasing the number of water dispensers within the school and the community; and implementation of a water policy.

Conclusions

Obesity is a major public health concern internationally with especially high rates of obesity in many of the Pacific regions and among Pacific Island people living in New Zealand. Strategies to reduce child and adolescent obesity in the total population must include targeted programmes for those most at risk[13]. This requires consideration of how the factors that contribute to obesity in the main population might differ in populations with different socio-cultural characteristics[13]. The plans of action for each site of the OPIC project were developed within the context of the local communities. The action plans are living documents to ensure ongoing feedback and participation of key community stakeholders. The preliminary successes in engaging community members to support the OPIC project, development of the action plans and initial strategies undertaken in the intervention communities have reinforced the community interaction process utilised by the project teams. The action plans will also provide the framework for evaluation to determine the overall effectiveness of the OPIC interventions.

The plans of action for each site of the OPIC project were developed within the context of the local communities.

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Letters to the Editor

Most Significant Change Technique in the Pacific

The Most Significant Change technique (MSC) is a rapidly emerging technique for monitoring change that is both qualitative and indicator free. Involving regular collection and interpretation of stories about change, MSC is a powerful tool for capturing and making sense of program outcomes.

MSC goes beyond merely capturing and documenting beneficiary stories; each story is subject to a process of participatory analysis which involves key people having conversations about what has been achieved by the program (Dart and Davies 2003).

Rick Davies developed the idea of MSC to meet some of the challenges associated with evaluating a complex, participatory, rural development program in Bangladesh (Davies 1996). Shortly after this, Jess Dart based in Australia, refined and adapted the methodology and joined Davies in writing the User Guide (Davies and Dart 2005). Numerous international development organisations and Australian public sector organisations now use MSC. In July 2006, there were over 500 people subscribed to an email group[1] who claimed to be either implementing MSC or considering implementation.

...MSC is a powerful tool for capturing and making sense of program outcomes.

In 2006 I am aware of seven organisations using MSC in the Pacific, and many of these work in areas associated with health improvement. My experience in using MSC in the Pacific has been highly positive; perhaps this is because the Pacific has such a strong oral tradition. However, despite the intrinsic appeal of using this technique in the Pacific, I do not recommend that MSC be used as the sole tool for monitoring and evaluation. Instead it is best used to complement the more conventional and often quantitative systems that are commonly used. While MSC offers strong evidence of outcomes for individual beneficiaries, and lots of opportunities for reflection and learning, it does not provide quantitative evidence for the 'reach' outcomes. Because of this, MSC may not satisfy donors accountability requirements on its own.

MSC appears to address many of the difficulties associated with evaluating participatory projects that have diverse outcomes and multiple stakeholders. It also has intrinsic appeal because it challenges people to think differently about program evaluation.

MSC has seven key steps (Davies, 1996):

1. The selection of domains of change to be monitored
2. The reporting period
3. The participants
4. Phrasing the question
5. The structure of participation
6. Feedback
7. Verification.

Firstly, the people managing the MSC process identify the domains of change they think need to be evaluated. This involves selected stakeholders identifying broad domains—for example, 'changes in people's lives'—that are not precisely defined like performance indicators, but are deliberately left loose, to be defined by the actual users.

Stories of significant change are collected from those most directly involved, such as beneficiaries and field staff. The stories are collected with the help of a simple question: 'During the last month, in your opinion, what was the most significant change that took place as a result of the project?' It is initially up to respondents to allocate their stories to a domain category. In addition to this, respondents are encouraged to report why they consider a particular change to be the most significant one.

The stories are then analysed and filtered up through the levels of management typically found within an organisation or program. Each level of the organisation reviews a series of stories sent to them by the level below and selects the single most significant account of change within each of the domains. Each group sends the 'selected' stories up to the next level of the project hierarchy, and the number of stories is whittled down through a systematic and transparent process. Every time stories are selected, the criteria used to select them are recorded and fed back to all interested stakeholders, so that each subsequent round of story collection and selection is informed by feedback from previous rounds. The organisation is effectively recording and adjusting the direction of its attention - and the criteria it uses for valuing the events it sees there.

At the end of each period, such as a year, a document is produced with all the stories selected at the uppermost organisational level over that period. The stories are accompanied by the reasons the stories were selected. This document contains several chapters with the stories selected from each of the domains of change. It can be forwarded to the project funders who are asked to assess the stories, selecting those that most fully represent the sort of outcomes they wish to fund. They are also asked to document the reasons for their choice. This information is fed back to project managers. It is in this way that dialogue is held across an organisation.

The selected stories can then be verified by visiting the sites of the described events. The purpose of this is two-fold: 1) to

[1]http://groups.yahoo.com/group/MostSignificantChanges

check that storytellers are reporting accurately and honestly, and 2) to provide an opportunity to gather more detailed information about events seen as especially significant. If conducted some time after the event, the visit also offers a chance to see what has happened since the event was first documented.

For those people wishing to find out more about MSC, there are several resources. The User Guide can be downloaded for free from www.clearhorizon.com.au, this web site also provides the details of the e-group. Clear Horizon also offers a 2-day training program for MSC in October and February each year in Melbourne (details also on this web site).

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Quit Victoria's smoking cessation training at the local, national and international level

Quit Victoria is a joint initiative of The Cancer Council Victoria, VicHealth, Department of Human Services and the National Heart Foundation which provide funding and considerable health promotion expertise to assist Quit's work. Quit provides a range of smoking cessation intervention training for health professionals at the local, regional, national and international level. In June 2005, Quit was invited by The Secretariat of the Pacific Community to provide tobacco control training and support to the newly appointed Smoking Cessation Adviser (SCA) in Kiribati, and to provide brief smoking cessation intervention training to the Ministry of Health's professional staff.

Quit's training and smoking cessation advice comprises core theory and practice. It is evidence based and designed to increase the confidence and participation of health professionals in smoking cessation intervention to increase quitting behaviours among their patients.

Health professionals are ideally placed to deliver time-effective smoking cessation advice and support to their patients as part of routine care. Even brief advice given by a health professional can encourage and help smokers to quit successfully.

Quit Victoria has tailored training for settings with particular issues and needs, for example, for Aboriginal health workers, staff in prisons and for mental health professionals. Health professionals are encouraged to draw on their own expertise and experience, and present the information to smokers in a manner that reflects and respects the needs of the group/s with whom they are working.

The training provided in Kiribati and with Kiribati's SCA used the core research based smoking cessation intervention model – the 5As – and provided scope for examples, case scenarios, discussion and group work that resulted in the content being culturally appropriate for the group and the setting in which they worked.

Even brief advice given by a health professional can encourage and help smokers to quit successfully.

The training included information on tobacco and health; understanding smoking behaviour; quitting and mental health; motivational interviewing, the 5As international framework and the stages of change model. Twenty health professionals including nurses, lecturers from the nursing school, the local dentist and representatives from the Pacific Action for Health Project participated in the day. Discussion about Kiribati and tobacco provided the opportunity for participants to incorporate training themes and ideas into their daily routine practice and role-plays with the SCA helped to put the 5As framework into practice.

Quit's training sessions were received positively by the health professionals in Kiribati and by Kiribati's SCA who reported that the training helped to improve their knowledge, and gain the confidence and skills to encourage and support their smoking patients to quit.

Quit's visit and work in Kiribati also helped to better understand tobacco control in that country and how Quit can continue to support the SCA to use the smoking cessation information in a practical sense for her situation and people, as well as look at the potential for change, such as helping to help raise awareness about the effects of smoking and passive smoking, reduce smoking rates and encourage and support smokers to quit.

Collaboration between Quit Victoria's Training Manager and Kiribati's SCA will continue, with Quit providing ongoing assistance, support and information to help the Kiribati community reduce their smoking rates and protect the community from the effects of tobacco smoke.

For further information about Quit's programs,

please visit Quit's website

www.quit.org.au.

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Quit Victoria is dedicated to eliminating the pain, illness and suffering caused by tobacco and is committed to the prevention of tobacco-related deaths and disease in the community through cessation programs and smokefree initiatives.

Pacific Circumcision of Boys

It was with grave concern and sadness that I heard your responses to being interviewed on Sunday Morning with Brian Crump 16 September 2007: Cut or Uncut. Some of your statements were factually inaccurate and I would like to make some points from your interview.

Finau: *"Well, the boy doesn't lose anything in fact by circumcision because the circumcision that's done – especially the Pacific traditional circumcisions – is a dorsal slit, What it means is that you just slit the top and the foreskin just stays where it is. Over the years it shrinks, but the glans penis is exposed completely, so it's unlike the amputation of the foreskin where you lose the foreskin so you don't lose anything. You keep it, but now you're rearranged".*

While it is true the ridged band is still there, apparently the foreskin atrophies so the eventual effect is the same as the Jewish-medical circumcision. The main male sexual sensory receptors (10,000 to 20,000 Meissner's corpuscles) are found within the ridged band in the foreskin. Contrary to popular and medical belief (from Victorian times), the glans only has a few Meissner's Corpuscles around the corona and is relatively insensitive – about as sensitive as the heal of the foot. That is why with keratinisation of the glans, circumcised males by the time they are 50 have very little sensation left. It is the interaction of the intact foreskin and the moist glans that gives the greatest sexual pleasure to the male.

Finau: *"They get ridiculed because they are not a complete man, they … in fact we have found in New Zealand that some of them … older men who gets married to Pacific women get themselves circumcised as well, because their women is demanding that they be circumcised because of the shame that goes with not being uncircumcised. In lots … in the studies that's been done … shame and being like the others or being like your father is some of the reasons that people give for getting circumcised. As well as hygiene and you know, several other health reasons that they give. And this study was done among people in Auckland and another surgeon, Kiki Moate, from the Cook Islands and a group in Christchurch did a similar study in Christchurch and pretty much the same reasons were given for wanting to be circumcised".*

This argument has also been used to justify female genital mutilation and still is in some cultures. It is sad comment on Polynesians society that members are not more tolerant of difference and are so ignorant about sexual anatomy. Only a violent, intolerant culture would demand parents cut off a healthy and sexually important part of their boy's body, make the boy suffer and sub-normalise his and his partners future sexual intercourse. In Pacific cultures male genital mutilation is accepted because the females have been taught that it is necessary for them to be able to accept a man for intercourse. The term cultural blindness is used to describe a custom that can only be perceived as ridiculous so those outside the culture. To understand how this works we have to imagine what would happen if the situation were reversed? Would female Polynesians be just as happy to have parts of their genitals hacked off because the men thought it was more hygienic and it made them more of a woman?

The hygiene argument has also been used to justify female genital mutilation, because female genitals also produce smegma and get smelly and smell like fish. An intact penis requires virtually no special attention for the first few years, so should not bother the parent at bath time. In fact the penis is best left alone. From about five years of age a child can wash much of his own body, so that parents will not have to waste their valuable time doing so. With increasing age, as the foreskin naturally retracts the boy can easily wash under it. It will take him only a fraction of the time it would take him to clean his teeth.

Finau: *"Well the benefits – not only the health benefits, but the fact that the health benefits are now endorsed by the WHO, UNICEF and so on. In fact circumcision in WHO's review of the literature showed that it's protective of men and their spouses from HIV and sexually transmitted diseases if people are circumcised – to the extent that they're recommending that circumcision of men is the one methods of prevention of HIV in certain societies in epidemic areas and so on and so forth. Apart from that it has protective … it has been found also in some of these studies that the men who get the spouses of the women have a lower risk of cervical cancer if their spouses were circumcised".*

This health benefit argument has also been used to justify female genital mutilation. Pseudo-medical reasons for circumcision have all have been found wanting. Even the HIV research in Africa has yielded equivocal results. For example, in one trial circumcised men became infected and in another the circumcised men had to refrain from sexual intercourse for 6 weeks or else use condoms and the trials were stopped early. Such poor research should not get past peer review in a scientific journal. No medical association in the world recommends male or female circumcision for disease prevention, so who do you? Are you aware that the WHO has been hijacked by a group of circumcisionists from the American Circumcision Industry i.e. Professor Robert C. Bailey, Professor Stephen Moses and Ronald H. Gray as well as Bertran Auver from France? During childhood minor infections (eg UTIs) are nowadays treated with antibiotics, rather than preventative amputation. Usually sexually transmitted diseases do not affect babies or boys. When old enough to be sexually active and if he wants to practice unsafe sex with multiple partners the boy can choose whether to be circumcised or not. Even if circumcised his chances of not becoming infected through unsafe sex would still be quite high.

Finau: *"Always. Always. This is the risk of infection, a scarring, there is the risk of bleeding, there is a risk of contractures – scars contracting after circumcision are done. Those are kinds of risks. But the risk is so minimal to the benefits."*

The risks of circumcision are not minimal. Medical advice, especially from USA, usually quotes very low figures for complications due to lack of patient follow up. Published studies reveal a less than optimistic story. An Australian study in 1970 found a complication rate of 15.5%, the most common being bleeding followed by meatal ulcers. [1] Patel in 1966 published a paper that stated that the complication rate was 55%[2]. Van Howe found in a study of 213 boys in Wisconsin that 'circumcised boys are more likely to develop balanitis, meatitis, coronal adhesions and meatal stenosis[3]. In 2003 a Canadian study found the complication rate to be 84% in a follow up period of 18 months after the procedure[4].

Long-term complications from neonatal circumcision remain conspicuously unacknowledged in the medical literature. These include psychological effects and impotence. Many men live with these complications without ever referring to a doctor and consider their state normal. However, men who are aware of their condition are starting to report negative physical effects as a result of neonatal circumcision. A 1996 study by NOHARMM of 546 men revealed that men were very aware of the physical consequences and mentioned: scarring, uncomfortable erections, erection curvature, discomfort and bleeding during sexual activity. Sixty one percent claimed circumcision results in problems or achieving erection and orgasm[5,6]. Several authors have noted changes in sexual behaviours of circumcised men in order to make up for the missing sensory input. Circumcised men are less likely to use condoms[7] and 'engage in a somewhat more elaborated set of sexual practices than do men who are not circumcised'. Circumcised men engage in oral, anal sex and masturbation at greater rates or frequencies[8]. Some circumcised men suffer life long psychological effects. Some have expressed rage that they take out on their families. Perhaps the level of violence seen in Pacific and Muslim men is a result of the violence that was done to them. Victims of abuse tend to find victims to re-enact their own abuse. This is particularly the case for males.

Gregory: "So for you, you'd see it as the same as parents consenting to having their child vaccinated?"

Finau: "*Definitely. It's a preventative measure.*"

This argument has also been used to justify female genital mutilation. Parents do have to make many decisions for their children. They have to decide whether to vaccinate their child or not. Of course, vaccination does not involve removing healthy body tissue that has an important sexual function. Many parents fall into the Eternal Child trap. This means that they do not consider their decisions in the light of their boy growing into a sexually active man. They only consider the effect of circumcision on the baby, not on the man he will become. If the word 'children' is replaced by the word 'men' this justification starts to lose its tempting power and in fact sounds quite ridiculous: Parents have to make a lot of decisions for their men.

Finau: "*No. I don't see it as a human rights issue. And you're right there is a Society in New Zealand, a Society for the Restoration of the Foreskin, people who have been circumcised and what not. However, the consent for the process is that given by the parents and there is a whole bunch of ethical arguments about who should consent for children in procedures and, of course, the answer is the parents and guardians are the ones that consent.*"

By the way, there is no Society for the Restoration of the Foreskin in New Zealand – yet. Paul Sherriff, a New Zealander, runs a website from Sydney which has 6000 members.

Those of us that were genitally mutilated without our permission do see neonatal male circumcision as a human rights issue. So does the law regarding female genital mutilation. Whether parents can give permission for healthy parts of their son's body can be cut off has yet to be tested in court. There is no specific New Zealand law protecting underage males from genital mutilation. However, it should be noted:

- According to international law male circumcision of minors is illegal because it is sexually discriminating and non-consensual.
- According to English Law male circumcision of minors without consent is assault since it cannot be excused on the basis of it being a treatment.

'The general rule in English criminal law, and reflected in other common law jurisdictions, is that any application of force, no matter how slight, is prima facie an assault. Consent serves as a defence to assaults that do not inflict actual bodily harm. Exceptions to the general prohibition on assaults causing bodily harm include medical treatment.,[9]

Circumcision is not a medical treatment, since no disease or condition is present. Several papers have been written on the subject and all agree that defence would be difficult up against the current scientific anatomical and physiological evidence, most of which appears to be unknown to the medical profession.

Finau: "*The bias comes from the medical profession because if you track the history of circumcision in the medical profession it wanes and waxes as it goes, depending on the advocacy for circumcision. Even after the WHO review, the recent organisation that's called Doctors Against Circumcision in reading their material, they're not talking about evidence, they're being emotional, they've emotionalised the whole thing because they want to cut the foreskin. And that's a different kind of approach from becoming health prevent it. There are those that believe in the foreskin and protects them. For what reason nobody really knows. Can you think of a good reason for the foreskin?*"

Because I am currently co-authoring a book subtitled The New Zealand Circumcision Hoax, I have studied the history of circumcision in New Zealand in considerable detail. It has never been popular in Europe in the past or now or even in England prior to the nineteenth century. It has only waxed and waned once. It waxed because the Victorian doctors used it to prevent masturbation and to treat the imaginary disease of 'congenital phimosis'. Our peak was in the 1940s when the rate was about 90% in some population subgroups due to the idea that it would prevent infection during war. It waned as the medical profession and then the parents saw it for the hoax it really was. It didn't prevent anything.

I have checked out http://www.doctorsopposingcircumcision.org/. They have much scientifically valid material there. They are also trying to reach the ignorant parents who are easily fooled by the American medical establishment that wants their money. It is understandable that you would consider them to be 'emotional', just as you sound extremely emotional about maintaining circumcision in Pacific

Culture. Remember they do not have a professional status or livelihood to protect, as you do and other circumcisers do. They are trying to protect the innocent victims who cannot protect themselves from what they see as a violation of human rights. Real physicians follow the "First do no harm" dictum, which precludes cutting off prepuces. That is what Doctors Opposing Circumcision are doing.

There are lots of reasons for having a foreskin. Its functions of the foreskin are well known outside medical circles, possible because many male doctors do not have foreskins so cannot understand the benefit. Here are a few reasons:

1. The foreskin keeps the glans moist so that friction on intercourse is reduced and so the few Meissner's sensory receptors around the corona are easily able to detect fine touch and movement.
2. The foreskin gives pleasurable sensory feed back to the male's brain through the 10,000 – 20,000 Meissner's sensory receptors in the ridged band as they detect fine touch and movement.
3. During intercourse the penile shaft slides back and forth within the foreskin. This reduces friction with the vaginal walls and gives the coronal sensory nerves short rests, so stopping premature ejaculation (which is more common in circumcised men).
4. The frenulum, which is part of the ridged band structure when stretched this tells the man when to reverse the stroke. Strokes are kept short.
5. The presence of the foreskin means the man uses shorter and less violent strokes.
6. Vaginal secretions tend to stay in the vagina so that artificial lubricants do not need to be used.
7. Stops the glans getting sore and numb.
8. Masturbation and foreplay is easier and more fun.

(If you want more details read O'Hara, K., & O'Hara, J., Sex as Nature Intended It. Turning Point Publications (MA); 2nd edition (September 2002) or O'Hara K, O'Hara J. The effect of male circumcision on the sexual enjoyment of the female partner. BJU Int 1999;83 Suppl 1:79-84)

Just because rituals are part of a culture does not mean they are necessarily good or desirable, or worth preserving. All cultures are capable of evolving and if they do not adjust to changing world conditions they may die out. Various cultures have already abandoned or begun to abandon such traditions as child sacrifice, slavery, foot-binding, cannibalism, racial segregation and female genital mutilation. As Roger McClay, past Commissioner for Children, has said:

'I believe it's a form of abuse but cultural considerations create a grey area…. At least some of the cultural and religious adherence to the procedure could be loosened with education. After all, smacking children or eating each other may be culturally appropriate, but it's certainly not acceptable in contemporary New Zealand.'[10]

People are now more conscious of the damage and suffering these traditions caused and that everyone has the right to human dignity. In time it is inevitable that all genital mutilation will be outlawed. Rather than promoting this harmful ritual in either sex, we need to lead humans towards a world where there is less violence and therefore less suffering. The leaders of minority cultures can either remain blindly bound to brutal behaviour, or spearhead progress towards a less ignorant and more compassionate world. It is unknown for genitally intact men to want parts of other men's sexual anatomy amputated. However, damaged people do keep damaging others. That is how genital mutilation has survived from Palaeolithic times. I challenge you to help break this cycle of violence.

Yours sincerely

(Mr) Lindsay Watson, B.Sc. (Hons.), Dip. Tchg.

Sunday, October 7, 2007 Ashburton 7700

Editor's Note

I am one of the authors of the paper on *Circumcision of Pacific boys: culture at the cutting edge (Pacific Health Dialog Vol no.).* I was interviewed as Mr. Watson have described above. I am also the editor so I will try to respond coolly to the emotional tirade on this sensitive issue.

Mr. Watson after agreeing that no removal of tissue takes place went on to argued about absence of the Meissner's Corpuscles. Please grasp the anatomical differences between dorsal slit and amputation of the neonatal foreskin! It will make the discussion more fruitful.

Body parts in humans, as a rule, atrophy from non-use and we have appendages of parts not being used any more .So if the Meissner's corpuscles atrophy, which I doubt, (I cannot find evidence of such an occurrence) it is probably from non-use whether with or without a dorsal slit circumcision. However if the corpuscles are repeatedly use it should not atrophy. Keratinisation cannot be the only factor in the claims of insensitivity problem especially with the high rates of premature ejaculation in societies.

I am not aware of any law, common or uncommon, where adults (parents or guardians) have no authority and responsibility to consent to procedures for minors. So the irrational responses to consent by children are not relevant here. Even the UNICEF Rights of Children advocate for the inalienable responsibility of adults to give children first call on resources.

In order to avoid repeating the paper and other evidences presented on circumcision of boys please refrain from emotional tirades until proper attention and analysis of the facts and the science have been given. This must be done before emotionally calling Pacific Cultures violent and intolerant especially from cultures that perpetuates wars and abuse of native peoples then meekly apologise as if this will make things all better and normal! There is a huge disconnect between the penis abuse and societal violence borne of fanaticism and the preoccupation with anti-circumcision.

Incidentally Pacific societies do not circumcise women as there is no cultural need or scientific evidence for this gross insensitivity. We all tamper with our body parts for all sorts of reasons without evidence of medical benefit. There is evidence of benefit for circumcision of men so please get circumcised and be protected.

Malo Sitaleki Finau

The office of HRCP/ PHD has relocated;

kindly note the address below:

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P.O.Box 13352, Suva,
FIJI.
Ph (679) 3310944; Fax (679) 3310955

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phd@hrcpacific.org

For all research related activities please e-mail;
research@hrcpacific.org

Abstracts on Oral Health Promotion in the Pacific

Retrieved by Zac Morse; *Fiji School of Medicine, Suva, Fiji.*

Slayton R; *Department of Pediatric Dentistry, University of Washington, Seattle, Washington, USA. Compend Contin Educ Dent. 2005 May;26(5 Suppl 1):30-5.*

One of the primary goals of dental health professionals is to prevent disease in our patients. As our knowledge of the disease process improves, so does our ability to manage the consequences of disease. Oral diseases, such as dental caries, can be devastating to both children and adolescents. Dental caries may interfere with a child's ability to eat, sleep, and learn, and it can have a significant impact on their self-esteem. Because caries affects individuals disproportionately, it is essential that those at the highest risk are identified early so that preventive therapies can be targeted toward those who are most likely to benefit. This article discusses the consequences of oral diseases in school-aged children, the factors that contribute to an individual's risk for dental caries, and the most effective therapies to prevent caries in this age group.

The dental profession must not ignore the oral health needs of infants and toddlers under three years of age.

An oral health promotion program for the prevention of complications following avulsion: the effect on knowledge of physical education teachers.

Holan G, Cohenca N, Brin I, Sgan-Cohen H.
Department of Pediatric Dentistry, Hadassah School of Dental Medicine, Jerusalem, Israel. holan@cc.huji.ac.il
Dent Traumatol. 2006 Dec;22(6):323-7

The aim was to assess the knowledge levels of physical education teachers before and after a seminar, presented by dental faculty as part of a community outreach program, in which the need for immediate treatment because of avulsion of permanent teeth has been emphasized, and to compare knowledge levels of teachers who attended the seminar with those who did not. Physical education teachers attended a seminar presented by senior faculty of the Hebrew University-Hadassah School of Dental Medicine as part of an educational campaign in the community. The seminar included clear instructions on the appropriate treatment of avulsed permanent teeth, which were appropriate for physical education teachers. The teachers completed two multiple-choice self-administered anonymous questionnaires related to immediate treatment they could provide in cases of permanent teeth avulsion. One hundred and twenty-six teachers completed the first questionnaire, 2 months before the seminar. One hundred teachers completed the second questionnaire 10 months after the seminar. Of these, 70 attended the seminar and 30 did not. Thirty-two teachers who attended the seminar had completed both questionnaires. The percentage of teachers who provided expected 'correct' answers in the first questionnaire (11% and 16%) was significantly lower than that in the second questionnaire (23% and 68%). The percentage of teachers who provided correct answers in the second questionnaire among those who attended the seminar (24% and 69%) was not significantly different from those who did not attend the seminar (20% and 66%). An educational campaign in the community with a seminar targeted towards a cohort of physical education teachers can improve the knowledge of the teachers, even those who did not attend the seminar, probably by means of a contamination effect. Despite the improvement, which was found, the level of knowledge after the campaign remained low and more public health promotion efforts are indicated.

Infant oral health: a protocol.

Goepferd SJ.
ASDC J Dent Child. 1986 Jul-Aug;53(4):261-6.

The potential exists today for dental health professionals to assist parents in rearing caries-free children. The knowledge and technology are available and the request for this service is growing. The dental professional has the opportunity to accept this role with enthusiasm and continue to be a leader among the health professions in disease prevention. The dental profession must not ignore the oral health needs of infants and toddlers under three years of age.

We must instead, take advantage of our knowledge and technology and begin our disease prevention efforts with children as infants, and educate parents regarding their important role in the oral health of their children. By doing so we can provide a pleasant and logical introduction to dentistry and promote the profession in a most positive way.

Prevention of Betel Quid Chewers' Oral Cancer in the Asian-Pacific Area

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Asian Pac J Cancer Prev. 2001;2(4):263-269.

Betel quid chewers' oral cancer" is one of the most common malignancies in South and Southeast Asian countries. Oral premalignancies are also very common in betel quid chewers and about 10% of these undergo malignant transformation. Although education for cessation of the betel quid chewing habit is important, there are few adequate strategies and policies for primary prevention, health promotion and education related to oral cancer control, especially in rural areas. In addition to oral health education, it is also crucial to establish a data-management system as well as monitoring and evaluation systems for oral cancer prevention.

Betel quid chewers' oral cancer" is one of the most common malignancies in South and Southeast Asian countries.

A 3-year community-based periodontal disease prevention programme for adults in a developing nation

Cutress TW, Powell RN, Kilisimasi S, Tomiki S, Holborow D.
Medical Research Council of New Zealand, Wellington.
Int Dent J. 1991 Dec;41(6):323-34.

A field trail of a community programme for improving periodontal health of adults was carried out in a geographically remote, unsophisticated rural population in the South Pacific islands of Tonga. The 3-year project (1986-89) involved three village communities, each with a population of approximately 1200. Village N received supplies of toothbrushes and toothpaste without charge, health education (videos, talks, posters) and periodic dental scaling (ultrasonic). Village K received the same as N except that dental scaling was not provided. Village E received none of the services provided to the villages N and K. Baseline and final examinations of 20-44-year olds showed that unsupervised self-care promoted at the community level, when supplemented with periodic removal of subgingival calculus, significantly improved periodontal health. Improvement was age dependent.

Evaluating oral health promotion: need for quality outcome measures.

Watt RG, Harnett R, Daly B, et al.
Department of Epidemiology and Public Health, University College London, UK. r.watt@ucl.ac.uk
Community Dent Oral Epidemiology. 2006 Feb;34(1):11-7.

Oral health promotion effectiveness reviews have identified the need to improve the quality of the evaluation of interventions. A project was undertaken to identify and assess the quality of available outcome measures. This paper describes the methodology adopted and highlights the need for further development of oral health promotion outcome measures. Initially a thorough and comprehensive search of both the published and unpublished literature was undertaken to identify potential outcome measures. A set of quality criteria was then developed and used to assess the identified measures. The search identified a total of 1202 outcome measures of which 39% (n = 466) were developed for use with schoolchildren. A high proportion of the identified measures were classified as health literacy and healthy lifestyle outcomes, appropriate for the evaluation of oral health education activities. Only 1% (n = 12) of measures identified were classified in the healthy public policy category. When reviewed against the quality criteria, 49% (n = 594) of the measures were considered satisfactory. The poorest performing measures were those classified as healthy lifestyle and health literacy measures in which only 33% (n = 72) and 41% (n = 240), respectively, were deemed to be of satisfactory quality. In conclusion, a significant number of oral health promotion evaluation outcome measures have been identified although their quality is highly variable. Very few high-quality outcome measures exist for use in the evaluation of oral health policy and environmental interventions. The lack of appropriate and high-quality outcome measures is hampering the development of oral health promotion.

Oral health promotion reduces plaque and gingival bleeding in the short term.

Hausen H.
Institute of Dentistry, University of Oulu, Oulu, Finland.
Periodontol 2000. 2005;37:35-47.

DATA SOURCES: Cochrane Database of Systematic Reviews, Database of Abstracts of Reviews of Effects, Health Technology Assessment Database, UK National Health Service Economic Evaluation Database, Cochrane Central Register of Controlled Trials and Medline. There were no date limits or language restriction.

STUDY SELECTION: Systematic reviews and controlled trials (randomised or quasi-randomised) assessing reductions in dental plaque levels and/or gingival bleeding (gingivitis) and comparing health education/health promotion interventions that did not involve clinical professional input or the use of pharmacological interventions, such as antiplaque agents were included. Studies involving only special groups, such as orthodontic or medically compromised patients or assessing only denture plaque, were excluded.

DATA EXTRACTION AND SYNTHESIS: A range of data were extracted from systematic reviews and trials, quality assessment was undertaken, and a qualitative overview of the findings was provided.

RESULTS: Twenty-six potentially relevant studies were identified. Six reports of five systematic reviews and 13 trials were discussed: four studies were not assessed as one was published in Polish and three could not be located.A wide range of educational and behavioural interventions were considered. These did not generally include clinical interventions and social or environmental approaches. The reviews have a number of limitations so their conclusions should be viewed with a degree of caution. However, the majority of studies achieved short-term reductions in plaque and gingival bleeding. Precise estimates of the improvement are difficult to assess because of the range and diversity of outcome measures used. The results of two meta-analyses indicate a reduction in plaque levels of 32-37%. Of 13 recently published trials evaluating educational interventions, five were set in schools, four focused on adults either in a clinical or workplace setting, three targeted older people, and one, infants. The design quality of the trials was variable. Allocation concealment was clearly described in two trials only, but blind outcome assessment was described in most of the trials and so were dropout rates. Other problems included a lack of controls, use of single blinding and relatively short follow-up.Positive effects on plaque and/or bleeding outcomes were seen in eight studies with no difference in five studies, of which only two employed a control group. Nevertheless, for the two trials that compared various approaches, reductions in plaque and gingival bleeding were generally observed in all groups over the trial period. None of the studies produced a negative effect. Although all the studies evaluated educational interventions, there was no clear indication that any particular type or style of educational approach was more effective than any other.

Health promotion messages can be reinforced throughout the most influential stages of children's lives, enabling them to develop lifelong sustainable attitudes and skills.

CONCLUSIONS: Reductions in plaque and gingival bleeding were seen in the short term in the majority of studies reviewed. The clinical and public health significance of these changes is, however, questionable. Future studies should use longer follow-up periods to assess whether short-term beneficial changes are sustained. Other forms of oral health promotion require better quality evaluation if they are to be used to improve periodontal health.

Health-promoting schools: an opportunity for oral health promotion.

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Dental Public Health, Leeds Dental Institute, England.
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Bull World Health Organ. 2005 Sep;83(9):677-85. Epub 2005 Sep 30.

Schools provide an important setting for promoting health, as they reach over 1 billion children worldwide and, through them, the school staff, families and the community as a whole. Health promotion messages can be reinforced throughout the most influential stages of children's lives, enabling them to develop lifelong sustainable attitudes and skills. Poor oral health can have a detrimental effect on children's quality of life, their performance at school and their success in later life. This paper examines the global need for promoting oral health through schools. The WHO Global School Health Initiative and the potential for setting up oral health programs in schools using the health-promoting school framework are discussed. The challenges faced in promoting oral health in schools in both developed and developing countries are highlighted. The importance of using a validated framework and appropriate methodologies for the evaluation of school oral health projects is emphasized.

Oral health and personnel needs in the Pacific.

Finau SA.
Community Health Services, South Pacific Commission, Noumea, New Caledonia.

Aust Dent J. 1996 Feb;41(1):53-8.

A regional review of oral health in the Pacific showed the major problems to be dental caries, periodontal diseases, poor dental health service management and lack of appropriate dental personnel. A strategy for training appropriate dentists to manage oral health services in the Pacific was suggested. Such a strategy must include training of ancillary and auxiliary dental health workers guided by dentists with clinical and managerial competencies. The training programme for dentists must be career-ladder, problem-based, and community-oriented with competency-based learning of a spiral of tasks with increasing sophistication. The curriculum content must contain about 50 percent on public health and clinical aspects, respectively.

Editorial Note: This is a Pub Med links for more abstracts

http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Retrieve&dopt=AbstractPlus&list_uids=16276943&query_hl=2&itool=pubmed_docsum

Tongan Nurses Association of New Zealand.

Eseta Finau, Violani Wills, Lavili Ahokovi, Sia Uili

The Tongan Nurses Association (TNA) was initiated by Dr Leopino Foliaki and a group of Tongan registered nurses who migrated to New Zealand in the late seventies and early eighties.. Dr Foliaki and 26 Tongan registered nurses met for the first time on Saturday 21st July 1984.

Office Bearers:

President	Violani Wills
Vice President	'Eseta Finau
Secretary	Ika Tonga Vea
Assistant	Susi Tameifuna
Treasurer	Lavili 'Ahokovi
Assistant	Siu Palu
Social Coordinators	Ma'u Kakala 'Ofa and Tina Fakalata
Education Coordinator	Violani Will

Registration of the Association

The association was formally registered as Tongan Nurse Association of New Zealand Incorporated on the 22nd of December 2000. The association also appointed Kaifonua Tupouniua as its first Patron.

Aims and Objectives

- To identify Tongan Nurses within New Zealand in order to encourage, create and expand a network
- To provide support and assistance to Tongan Nurses in gaining New Zealand registration (students or overseas nurses), in pursuing further education and achieving optimum standards of nursing
- To promote and encourage the nursing profession as a career for Tongans
- To encourage and promote the use of the Tongan language and culture among their nurses
- To achieve recognition as a professional organization and to have a voice in health-related issues and policy-making at all levels.
- To maintain an effective communication between the Tongan community and Health Services
- To ensure culturally sensitive delivery of health care to the Tongan community
- To foster a good relationship with the New Zealand Nurses Organization, the Maori Nurses Association and other nurses associations.

PHD Matters

Editorial Assistance

With much pleasure we introduce you 'Health Promotion in the Pacific', an issue dedicated specifically to promoting health efforts in the Pacific. The beginning of the year presented a real challenge to the editorial team as it worked to produce two issues simultaneously in an effort to catch up with the back log,, and delays in production process and of the printing dates.

However we are pleased that PHD has now come up to a standard at which the team has employed every means to alleviate further extension on the timeline of the publication of the current and future issues.

As always we are thankful to our dedicated authors and reviewers who are too numerous to name and whose works speak volumes for the journal. We thank you for your labor of love and being the lifeline of PHD!

The PHD web link (http://www.hrcpacific.org/archives.html) has been updated to support access for those wanting to subscribe to past and future issues. The other issue constantly faced by PHD is distribution and we hope that by having all PHD related information on the web will increase the marketability of the journal to achieve its envisaged goal to be self-sufficient. In order to access the journal online please log in to http://www.hrcpacific.org/archives.html and subscribe to the journal at your leisure as desirable.

We would like to thank Will Parks and Graham Roberts for their contribution towards the issue. Their years of determination and support have given us this issue. Such labor of love wall continue to keep PHD alive and remain an asset for the region.

Till the next time……

Editorial team

Makeleta Koloi and Shirley Prasad.

"If we don't succeed then we run the risk of failure."

- Former Vice President of the US Dan Quayle

From the Editor

It's 2008 and we are still working on the PHD issues of 2007. This, of course, is the second issue of that year. We prematurely thought that we would complete this much earlier but again fate struck and here we are in June 2008 and we are still struggling to get over the 2007 PHD issues. We have the articles, time and the will but various hurdles in our track slowed our progress. Amongst the hurdles are:

HRCP moved base and ran into resource constraints; hitches in the production system;

and last, but not least, new non-pacific interests now argues the PHD editor over content issues relevant to Pacific Health and its appropriateness to be included in PHD. These new interferences is of immense interest, especially after 14 years of could-not-be-bothered! All I can say is that PHD must now matter more than many years ago and thank goodness!

As the long suffering editor I am flattered that after so many years of thankless labor of love some signs of involvement, albeit selfish, have emerged. I hope more and genuine contributions will be forth coming and this is not just a flash in the pants with some ulterior motives. At the expense of Pacificness.

This PHD issue on Health Promotion in the Pacific is a joint effort of Drs. Will Parks and Graham Roberts to provide a coherent snapshot of the Pacific experiences. Many thanks to these gentlemen and especially to all the contributors. We at HRCP and the PHD editorial team apologize for the delay and hope we receive more papers from you all about the next phases of your work. Please note that some of the papers earmarked for the Health Promotion issue have been published in earlier issues of PHD for reasons of space and delays.

After 15 years and 30 issues of PHD (each issue ranging from 100 to 300 pages per issue), we hope PHD will cease being a delinquent child and become a resilient youth with the help of a new fresh team. I am looking for a new PHD team to start with the first issue of 2010 and take PHD to adulthood. Please consider this vacancy and indicate directly to HRCP how you may want to be involved so we can start briefing you to take over and continue to grow PHD so it continues to matter more and more!

Thank you one and all.

Senior Editor
Sitaleki 'Ata'ata Finau (Editor)

"One man's life touches so many others, when he's not there it leaves an awfully big hole."
Clarence - It's A Wonderful Life

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