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Letter from Field

Working conditions and perception on incentives of Fiji community health workers: findings from a survey with a convenience sample in 2016

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Editor's note: Dr. Changgyo Yoon is a technical officer for integrated health service delivery, based in the WHO representative office in the South Pacific. He has undertaken projects on strengthening primary health care primarily in Fiji, Kiribati and Tuvalu.

INTRODUCTION

Fiji is a small island developing state where 892,000 people live on 100 inhabited islands and 18,000 square kilometres in the South Pacific Ocean are covered by 300 islands.[1] The Government of Fiji runs the public health systems that heavily rely on general taxation for financing health care.[2] The health systems provide comprehensive health care services based on its provincial arrangement such as the Central, Eastern, Western, and Northern. The health services are delivered through 98 nursing stations, 84 health centres, 17 sub divisional hospitals, 3 divisional hospitals, and 2 specialty hospitals for tuberculosis treatment and mental health services.[3] Like other developing countries in the South Pacific, Fiji has been experiencing triple burden of diseases that includes communicable, non-communicable diseases (NCDs) and the health threats of climate change.[4] The recent statistics show that the leading causes of death in Fiji were diabetes (19.7%), ischemic heart diseases (16.6%) and cerebrovascular diseases (7.4%).[3]

In accordance with the Alma Ata declaration that envisioned key strategies towards strengthening primary health care,[5] many developing countries including Fiji have been implementing the community health worker (CHW) program to address the shortage of health workers since 1970s. The CHW program has been integral in providing essential health services to underserved people especially those who reside in remote areas.[6-10] A number of meta analyses have demonstrated that the CHW program helps enhance the effectiveness of reproductive, maternal, newborn, child and adolescent health services and increase treatment rate of infectious diseases.[11,12]

In continuation of the program, the Ministry of Health and Medical Services of Fiji (MHMS) had provided in-service trainings for CHWs followed in the early 1980s.[13] In the 1990s, the

number of CHWs reached to 3,000 according to the ministry's records but thereafter the number had decreased and the attention given to the program had diminished over the past 2 decades.[14] In 2012, the MHMS decided to revamp the program to revitalize primary health care with the assistance of the Fiji Health Sector Support Program (FHSSP) which was funded by the Australian Aid.[15]

Since a number of reports on Fiji health systems and CHW programmes in other countries addressed a high attrition rate of CHW that impairs the quality of services,[16] policy options for incentivising the program have been discussed to improve the performance of CHWs.[6] However, there was no prior information about what kind of and how much incentive is preferred by CHWs. In addition, no study has addressed on their working conditions such as working hours, where they work, what kind of services they provide and how CHWs are integrated into health systems. This study therefore seeks to identify baseline information of CHW program with a cross sectional survey on a selected sample of CHWs across 4 divisions of Fiji.

METHODS

A cross sectional survey was conducted with a structured questionnaire for active CHWs who were registered in the database of MHMS. As of August 2015, there were 1,805 active members registered.

Sample selection

A convenience sampling method was used to recruit the study subjects from the active CHWs for this study. Sub-divisional public health nurses managing health centres recruited interviewees. This method was selected as the limited communications and transportations between the outer islands and the main island restricted the ability to conduct the survey with a nationwide and random sampling method. The interviews were also undertaken while site visiting at the 4 provinces: Central, Western, Northern, and Eastern.

Questionnaire and measures

A questionnaire was developed to study the following variables: socio-economic status (sex, age, educational level, and duration of living in the community); working condition (recruitment process, perceived roles, duration of working, average working hours, average number of working days, and ethic group to serve); access to health facility and referral process (mode of transportation, time to reach, and referral process); supervision and training (frequency of supervisory visit, reporting frequency, training experience, and suggestions on improving trainings); motivation and incentives. In the development of the survey questionnaire, we referred to: the training policy documents published by MHMS: training manuals developed by MHMS and the FHSSP,[17-20] role delineation of health facilities endorsed in 2009,[21] and the 2016 Annual corporate plan of MHMS.[22] After the development, the Department of Nursing, the Centre for Health Information Policy and Systems Research of the Fiji National University and FHSSP focal person on CHW program reviewed the questionnaire for the relevance with the objectives of the study.

Survey schedule and sites

A team consisting of MHMS, World Health Organization, and the Fiji National University visited selected sites in the 4 divisions from April to June 2016: 1 settlement in the Central

division, 5 villages in Kadavu Island of the Eastern division, 3 villages in the Northern division, and 1 site in the Western division.

Statistical analysis

Data were analysed using the Statistical Analysis System (SAS) statistical software package version 9.3 (SAS Institute, Cary, NC, USA). Descriptive analyses were undertaken with tabulation and χ^2 test.

Ethics statement

An ethical approval on this study was obtained from the Fiji National Health Research Ethics Review Committee (2015-132-NW).

RESULTS

During the survey, a total of 106 CHWs completed the survey questionnaire. The divisional distribution of participants was: 31 from the Central division, 32 from the Eastern division, 18 from the Northern division, and 25 from the Western division. The number of interviewees accounts 6% of all active CHWs registered at the national database. Of the 106 respondents, a majority of CHWs was female (94.3%) who have been living in their community for 10 years or more (70.8%). The mean age of the subjects was 44.8 ± 10.2 years old. A majority of the CHWs was over 30 years of old (93.4%), with one-third aged 50 years or above (31.3%). The most of subjects have completed secondary school as their highest level of education (79.2%) (**Table 1**).

The survey asked about the recruitment process and the perceived roles of CHWs. The most was recruited by their community groups (86.8%) while the rest was recruited by the public health centre (11.3%) or another party (1.9%). More than 90% of respondents reported that their main role in the community was to promote wellness (95.2%). Other roles addressed include preventing NCDs (77.1%), promoting maternal and child health (75.2%), providing family providing first aid (71.4%), and family planning services (69.5%). The subjects were

Table 1. Demographic information of the study subjects

Characteristics	Central	Eastern	Northern	Western	Total
Gender					
Male	3/31 (9.7)	1/32 (3.1)	1/18 (5.6)	1/25 (4.0)	6/106 (5.7)
Female	28/31 (90.3)	31/32 (96.9)	17/18 (94.4)	24/25 (96.0)	100/106 (94.3)
Age group (years)					
20–30	2/31 (6.5)	4/32 (12.5)	1/18 (5.6)	0/25 (0.0)	7/106 (6.6)
31–40	10/31 (32.3)	8/32 (25.0)	6/18 (33.3)	5/25 (20.0)	29/106 (27.4)
41–50	12/31 (38.7)	10/32 (31.3)	7/18 (38.9)	8/25 (32.0)	37/106 (34.9)
≥ 51	7/31 (22.6)	10/32 (31.3)	4/18 (22.2)	12/25 (48.0)	33/106 (31.1)
Highest educational level					
No formal education	0/31 (0.0)	0/32 (0.0)	0/18 (0.0)	0/25 (0.0)	0/106 (0.0)
Primary school	2/31 (6.5)	4/32 (12.5)	1/18 (5.6)	2/25 (8.0)	9/106 (8.5)
Secondary school	23/31 (74.2)	25/32 (78.1)	15/18 (83.3)	21/25 (84.0)	84/106 (79.2)
Vocational or technical	4/31 (12.9)	3/32 (9.4)	2/18 (11.1)	2/25 (8.0)	11/106 (10.4)
University or higher	2/31 (6.5)	0/32 (0.0)	0/18 (0.0)	0/25 (0.0)	2/106 (1.9)
Duration of living in the community (years)					
< 1	0/31 (0.0)	2/32 (6.3)	1/18 (5.6)	0/25 (0.0)	3/106 (2.8)
1–2.9	0/31 (0.0)	6/32 (18.8)	0/18 (0.0)	0/25 (0.0)	6/106 (5.7)
3–4.9	1/31 (3.2)	5/32 (15.6)	1/18 (5.6)	1/25 (4.0)	8/106 (7.5)
5–9.9	4/31 (12.9)	4/32 (12.5)	4/18 (22.2)	2/25 (8.0)	14/106 (13.2)
≥ 10 years	26/31 (83.9)	15/32 (46.9)	12/18 (66.7)	22/25 (88.0)	75/106 (70.8)

Table 2. Working conditions of CHWs by division

Working conditions	Central	Eastern	Northern	Western	Total
Recruitment					
Community (including village council)	22/31 (71.0)	32/32 (100)	17/18 (94.4)	21/25 (84.0)	92/106 (86.8)
Public health centre	8/31 (25.8)	0/32 (0.0)	1/18 (5.6)	3/25 (12.0)	12/106 (11.3)
Local government	0/31 (0.0)	0/32 (0.0)	0/18 (0.0)	0/25 (0.0)	0/106 (0.0)
NGO/community-based organisation	0/31 (0.0)	0/32 (0.0)	0/18 (0.0)	0/25 (0.0)	0/106 (0.0)
Others	1/31 (3.2)	0/32 (0.0)	0/18 (0.0)	1/25 (4.0)	2/106 (1.9)
Expected CHW role					
Promote wellness	29/31 (93.6)	29/31 (93.6)	17/18 (94.4)	25/25 (100.0)	100/105 (95.2)
Prevent NCD	19/31 (61.3)	24/31 (77.4)	15/18 (83.3)	23/25 (92.0)	81/105 (77.1)
Promote maternal and child health	19/31 (61.3)	23/31 (74.2)	15/18 (83.3)	22/25 (88.0)	79/105 (75.2)
Provide first aid	14/31 (45.2)	25/31 (80.7)	14/18 (77.8)	22/25 (88.0)	75/105 (71.4)
Family planning service	15/31 (48.4)	22/31 (71.0)	14/18 (77.8)	22/25 (88.0)	73/105 (69.5)
Others	2/31 (6.5)	3/31 (9.7)	0/18 (0.0)	2/25 (8.0)	7/105 (6.7)
Duration of working as CHW (years)					
< 3	8/31 (25.8)	13/32 (40.6)	3/18 (16.7)	8/25 (32.0)	32/106 (30.2)
3–4.9	6/31 (19.4)	1/32 (3.1)	1/18 (5.6)	4/25 (16.0)	12/106 (11.3)
5–9.9	9/31 (29.0)	5/32 (15.6)	10/18 (55.6)	2/25 (8.0)	26/106 (24.5)
≥ 10	8/31 (25.8)	13/32 (40.6)	4/18 (22.2)	11/25 (44.0)	36/106 (34.0)
Average working hours per day (hours)					
< 1	4/30 (13.3)	12/31 (38.7)	3/18 (16.7)	6/25 (24.0)	25/104 (23.6)
1–2.9	17/30 (56.7)	14/31 (45.2)	7/18 (38.9)	10/25 (40.0)	48/104 (45.3)
≥ 3	9/30 (30.0)	5/31 (16.1)	8/18 (44.4)	9/25 (36.0)	31/104 (29.2)
Average No. of days per month (days)					
< 5	6/31 (19.4)	20/32 (62.5)	5/18 (27.8)	4/25 (16.0)	35/106 (33.0)
5–9.9	11/31 (35.5)	7/32 (21.9)	5/18 (27.8)	8/25 (32.0)	31/106 (29.2)
≥ 10	14/31 (45.2)	5/32 (15.6)	8/18 (44.4)	13/25 (52.0)	40/106 (37.7)
Major ethnic groups to serve (multiple responses)					
Fijian	25/26 (96.2)	28/32 (87.5)	18/18 (100.0)	4/4 (100.0)	75/80 (93.8)
Indo Fijian	5/26 (19.2)	1/32 (3.1)	0/18 (0.0)	1/4 (25.0)	7/80 (8.8)
Rotuman	2/26 (7.7)	0/32 (0.0)	1/18 (5.6)	1/4 (25.0)	4/80 (5.0)
Other pacific islanders	3/26 (11.5)	5/32 (15.6)	0/18 (0.0)	0/4 (0.0)	8/80 (10.0)
Others	1/26 (3.9)	0/32 (0.0)	0/18 (0.0)	0/4 (0.0)	1/80 (1.3)

CHW = community health worker; NGO = non-governmental organization governmental organization; NCD = non-communicable disease.

found to be working as CHW for 5 years or more (58.5%) and the mean of working years as CHW was 8.6 ± 8.8 years. The working hours per day and number of days per month showed a variability among CHWs: 1–2.9 hours was the most, followed by 3 hours or more and less than 1 hour; and 10 days or more was the most frequent response for working days. In the question asking about the major ethnic group, it was identified that i-Taukei (indigenous Fijians) was the major ethnic group served by the majority of CHWs (93.8%) (**Table 2**).

In the section on access to health facility (**Table 3**), it was found that the most common mode of transportation to a nearest healthcare facility was by car or bus (69.3%), followed by walking (23.8%). The time to reach a nearest healthcare facility varied with most commutes being 10–30 minutes (36.8%) or 30–60 minutes long (29.2%). However, 16 respondents reported that the nearest facility was between 1–3 hours away, and one reported a commute of more than 3 hours. The majority reported to a supervising nurse (53.6%) and a small proportion reported that they report the village council (16.5%) prior to referring a patient to a healthcare facility while 26.8% reported that they move the patient by themselves. Six respondents reported that they did not have a mode of communication with the nearest healthcare facility, and 33 respondents did not have a mode of transport to the facility. Only 19% of respondents had a pooled fund to cover costs associated with referring emergency cases to the nearest healthcare facility (**Table 3**).

Table 3. Access to health facility and referral process by division

Variables	Central	Eastern	Northern	Western	Total
Usual mode of transportation					
On foot	1/28 (3.6)	14/32 (43.8)	1/16 (6.3)	8/25 (32.0)	24/101 (23.8)
Bicycle	0/28 (0.0)	0/32 (0.0)	0/16 (0.0)	0/25 (0.0)	0/101 (0.0)
Motor cycle	0/28 (0.0)	1/32 (3.1)	0/16 (0.0)	0/25 (0.0)	1/101 (1.0)
Car/bus	25/28 (89.3)	13/32 (40.6)	15/16 (93.8)	17/25 (68)	70/101 (69.3)
Boat/ship	2/28 (7.1)	3/32 (9.4)	0/16 (0.0)	0/25 (0.0)	5/101 (5.0)
Others	0/28 (0.0)	1/32 (3.1)	0/16 (0.0)	0/25 (0.0)	1/101 (1.0)
Time to reach the nearest health facility					
Less than 10 minutes	6/31 (19.4)	5/32 (15.6)	2/18 (11.1)	6/25 (24.0)	19/106 (17.9)
Between 10 to 30 minutes	9/31 (29.0)	12/32 (37.5)	8/18 (44.4)	10/25 (40.0)	39/106 (36.8)
Between 30 to 60 minutes	11/31 (35.5)	9/32 (28.1)	6/18 (33.3)	5/25 (20.0)	31/106 (29.2)
Between 1 to 3 hours	5/31 (16.1)	5/32 (15.6)	2/18 (11.1)	4/25 (16.0)	16/106 (15.1)
More than 3 hours	0/31 (0.0)	1/32 (3.1)	0/18 (0.0)	0/25 (0.0.0)	1/106 (0.9)
Referral process					
With a supervising nurse	14/27 (51.9)	14/30 (46.7)	8/17 (47.1)	16/23 (69.6)	52/97 (53.6)
With a village council	1/27 (3.7)	7/30 (23.3)	4/17 (23.5)	4/23 (17.4)	16/97 (16.5)
By myself	11/27 (40.7)	9/30 (30.0)	4/17 (23.5)	2/23 (8.7)	26/97 (26.8)
Not involved	1/27 (3.7)	0/30 (0.0)	0/17 (0.0)	1/23 (4.4)	2/97 (2.1)
Others	0/27 (0.0)	0/30 (0.0)	1/17 (5.9)	0/23 (0.0)	1/97 (1.0)
Mode of communication to health facility					
Yes	28/30 (93.3)	30/32 (93.8)	16/18 (88.9)	25/25 (100.0)	99/105 (94.3)
Mode of transportation to health facility					
Yes	18/29 (62.1)	27/32 (84.4)	6/17 (35.3)	19/25 (76.0)	70/103 (68.0)
Pooled fund for referral in emergency case					
Yes	7/31 (22.6)	7/31 (22.6)	2/18 (11.1)	0/4 (0.0)	16/84 (19.0)

We asked about key competency questions on health programs that CHWs provide (**Table 4**).

Table 4. Competency in promoting wellness, safe motherhood, and child health

Competency	Central	Eastern	Northern	Western	Total
Wellness and NCD					
Key messages of promoting wellness	26/31 (83.9)	23/32 (71.9)	16/18 (88.9)	12/25 (48.0)	77/106 (72.6)
Risk factors of NCD	27/31 (87.1)	21/32 (65.6)	13/18 (72.2)	11/25 (44.0)	72/106 (67.9)
Know current NCD epidemic	9/31 (29.0)	13/31 (41.9)	8/18 (44.4)	4/25 (16.0)	34/105 (32.4)
Common complications of NCD	25/29 (86.2)	22/32 (68.8)	14/18 (77.8)	19/25 (76.0)	80/104 (76.9)
Danger signs of diabetes	30/31 (96.8)	30/32 (93.8)	18/18 (100)	19/24 (79.2)	97/105 (92.4)
Undertaking health promotion	28/31 (90.3)	25/32 (78.1)	17/18 (94.4)	12/25 (48.0)	82/106 (77.4)
Antenatal care					
Know what antenatal care is	29/31 (93.6)	29/32 (90.6)	17/18 (94.4)	20/25 (80.0)	95/106 (89.6)
Know causes of maternal death	21/31 (67.7)	25/32 (78.1)	16/18 (88.9)	9/25 (36.0)	71/106 (67.0)
Key strategies to reduce maternal death and illness	23/30 (76.7)	17/31 (54.8)	14/17 (82.4)	12/25 (48.0)	66/103 (64.1)
Reminding for antenatal visits	30/30 (100.0)	31/31 (100.0)	17/17 (100.0)	25/25 (100.0)	103/103 (100.0)
Reminding for taking iron and folic tablets	30/31 (96.8)	31/32 (96.9)	17/17 (100.0)	24/25 (96.0)	102/105 (97.1)
Referring almost giving birth women to the healthcare facility	27/31 (87.1)	28/32 (87.5)	17/18 (94.4)	25/25 (100.0)	97/106 (91.5)
Distribution of family planning IEC materials	28/31 (90.3)	25/32 (78.1)	17/18 (94.4)	18/25 (72.0)	88/106 (83.0)
Referring women for family planning services	29/31 (93.6)	26/32 (81.3)	17/17 (100.0)	19/25 (76.0)	91/105 (86.7)
Spacing children and promoting contraceptives	30/31 (96.8)	32/32 (100.0)	18/18 (100.0)	22/25 (88.0)	102/106 (96.2)
Know danger signs or risks of early or pre-term labour	26/31 (83.9)	26/32 (81.3)	17/17 (94.4)	20/25 (83.3)	89/105 (84.8)
Promote child health and wellness					
Use of the child health record	29/31 (93.6)	18/32 (56.3)	11/17 (61.1)	5/25 (20.8)	63/105 (60.0)
Notifying of unimmunized children	30/31 (96.8)	32/32 (100.0)	18/18 (100.0)	3/25 (12.0)	83/106 (78.3)
Support families with sick children and first aid					
Identify danger signs and care seeking for pneumonia and diarrhoea	28/31 (90.3)	26/32 (81.3)	14/18 (77.8)	15/25 (60.0)	83/106 (78.3)
Referring a severe child patient	29/31 (93.6)	29/32 (90.6)	18/18 (100.0)	18/25 (72.0)	94/106 (88.7)
Documenting the sick child	25/30 (83.3)	11/30 (36.7)	10/17 (58.8)	17/24 (70.8)	63/101 (62.4)

This table shows number and proportion of interviewees who responded full capability on each competency.
NCD = non-communicable disease; IEC = information, education and communication.

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In the section of wellness and NCD, most of CHWs across divisions were competent for health promotion and campaign but the least competent was observed at knowing NCD epidemic (32.4% of all participants). For antenatal care, a majority of CHWs reported their competency in most of items but knowing causes of maternal death and key strategies to reduce maternal death and illness displayed their weakest competency (67.0% and 64.1%, respectively). In the section of family and child care, use of the child health record and documenting the sick child show limited competency of CHWs (60.0% and 62.4%, respectively),

The subjects were asked about the supervision on their activities and trainings provided (**Table 5**). More than a half of the subjects indicated that a zone nurse was their primary supervisor (52.5%), while another half indicated *Turana ni Koro* (the chief of Fijian village) (47.5%). The majority of CHWs responded that they report to supervisors up to 3 times per quarter (59.4%). With regard to trainings, the most of subjects (95.3%) had attended a training program in the past year. A half had attended more than 3 sessions in the past year (52.9%), and most were satisfied with the quality trainings provided (87.9%). When asked how the program could be improved, 38.8% of respondents recommended financial support for costs such as transport to the training location, 32.7% recommended increasing the days of the training program, and 22.4% recommended increasing the quality of the training program.

The subjects were asked about motivation and incentives for working as a CHW (**Table 6**). The most of the respondents said "contribution to the community" (37.1%) and "skill and career earned while working as a CHW" (34.8%). In terms of the type of incentive, the most

Table 5. Supervision and trainings provided

Variables	Central	Eastern	Northern	Western	Total
Frequency of supervisory visit (per quarter)					
Once	5/31 (16.1)	14/32 (43.8)	6/18 (33.3)	11/25 (44.0)	36/106 (34.0)
Up to 3 times	22/31 (71.0)	18/32 (56.3)	11/18 (61.1)	12/25 (48.0)	63/106 (59.4)
More than 3 times	4/31 (12.9)	0/32 (0.0)	1/18 (5.6)	2/25 (8.0)	7/106 (6.6)
Primary supervisor					
Turana ni Koro (Village chief)	9/29 (31.0)	14/29 (48.3)	15/18 (83.3)	0/4 (0.0)	38/80 (47.5)
Zone nurse	20/29 (69.0)	15/29 (51.7)	3/18 (16.7)	4/4 (100.0)	42/80 (52.5)
Frequency of report submission (per quarter)					
Once	5/31 (16.1)	9/32 (28.1)	1/18 (5.6)	1/25 (4.0)	16/106 (15.1)
Up to 3 times	24/31 (77.4)	22/32 (68.8)	17/18 (94.4)	24/25 (96.0)	87/106 (82.1)
More than 3 times	2/31 (6.5)	1/32 (3.1)	0/18 (0.0)	0/25 (0.0)	3/106 (2.8)
Existence of standard reporting template (yes)	21/30 (70.0)	30/32 (93.8)	15/17 (88.2)	19/25 (76.0)	85/104 (81.7)
Difficulty in preparing the report (yes)	5/31 (16.1)	3/31 (9.7)	1/17 (5.9)	0/24 (0.0)	9/103 (8.7)
Training experience in past year (yes)	30/31 (96.8)	30/32 (93.8)	18/18 (100.0)	23/25 (92.0)	101/106 (95.3)
No. of trainings given					
Once	3/30 (10)	4/30 (13.3)	8/18 (44.4)	5/24 (20.8)	20/102 (19.6)
Less than 3 times	7/30 (23.3)	13/30 (43.3)	1/18 (5.6)	7/24 (29.2)	28/102 (27.5)
Three times or more	20/30 (66.7)	13/30 (43.3)	9/18 (50)	12/24 (50.0)	54/102 (52.9)
Satisfaction of trainings					
Very bad	0/28 (0.0)	2/29 (6.9)	0/17 (0.0)	1/25 (4.0)	3/99 (3.0)
Bad	0/28 (0.0)	0/29 (0.0)	0/17 (0.0)	0/25 (0.0)	0/99 (0.0)
Fair	5/28 (17.9)	1/29 (3.5)	1/17 (5.9)	2/25 (8.0)	9/99 (9.1)
Good	23/28 (82.1)	26/29 (89.7)	16/17 (94.1)	22/25 (88.0)	87/99 (87.9)
Suggestion on improving trainings					
Provide financial support	5/12 (41.7)	11/25 (44.0)	2/10 (20.0)	1/2 (50.0)	19/49 (38.8)
Increase quality	5/12 (41.7)	3/25 (12.0)	3/10 (30.0)	0/2 (0.0)	11/49 (22.4)
Increase days	1/12 (8.3)	10/25 (40.0)	5/10 (50.0)	0/2 (0.0)	16/49 (32.7)
Inform us schedule	1/12 (8.3)	1/25 (4.0)	0/10 (0.0)	1/2 (50.0)	3/49 (6.1)
Increase frequency	0/12 (0.0)	0/25 (0.0)	0/10 (0.0)	0/2 (0.0)	0/49 (0.0)

Table 6. Motivation, desired types of incentive and amount of financial incentive

Variables	Central	Eastern	Northern	Western	Total
Most important motivation					
Financial incentive	4/27 (14.8)	1/31 (3.2)	4/17 (23.5)	0/14 (0.0)	9/89 (10.1)
Contribution to the community	14/27 (51.9)	11/31 (35.5)	2/17 (11.8)	6/14 (42.9)	33/89 (37.1)
Respect from the community	3/27 (11.1)	6/31 (19.4)	5/17 (29.4)	1/14 (7.1)	15/89 (16.9)
Skill and career earned	6/27 (22.2)	13/31 (41.9)	6/17 (35.3)	6/14 (42.9)	31/89 (34.8)
Others	0/27 (0.0)	0/31 (0.0)	0/17 (0.0)	1/14 (7.1)	1/89 (1.1)
Type of incentive					
Financial incentive	11/26 (42.3)	0/32 (0.0)	9/17 (52.9)	1/18 (5.6)	21/93 (22.6)
In-kind incentive (e.g. crop, chicken, root, etc.)	0/26 (0.0)	0/32 (0.0)	0/17 (0.0)	0/18 (0.0)	0/93 (0.0)
Identification as a CHW and recognition from the community	0/26 (0.0)	7/32 (21.9)	2/17 (11.8)	4/18 (22.2)	13/93 (14.0)
Personal growth and development	0/26 (0.0)	2/32 (6.3)	0/17 (0.0)	0/18 (0.0)	2/93 (2.2)
Training and getting more health knowledge	15/26 (57.7)	23/32 (71.9)	6/17 (35.3)	13/18 (72.2)	57/93 (61.3)
Desired amount of financial incentive					
$FJD 10	0/31 (0.0)	2/32 (6.3)	0/18 (0.0)	3/25 (12.0)	5/106 (4.7)
$FJD 40	0/31 (0.0)	6/32 (18.8)	1/18 (5.6)	9/25 (36.0)	16/106 (15.1)
$FJD 80	4/31 (12.9)	7/32 (21.9)	1/18 (5.6)	9/25 (36.0)	21/106 (19.8)
$FJD 100 or more	27/31 (87.1)	17/32 (53.1)	16/18 (88.9)	4/25 (16.0)	64/106 (60.4)

CHW = community health worker.

of participants chose "training and getting more knowledge" (61.3%), followed by financial incentive which accounted only 22.6% of all respondents. When asked how much the financial incentive should be, the majority reported $FJD 100 or more per month (60.4%).

DISCUSSION

This study sought to identify the key information of CHW program in terms of working conditions, needs on training, supervisory arrangement and opinions on incentive scheme. It explored factors that drive CHWs to undertake their roles as well as the types and amount of incentive for their efforts. It provided recent information on the roles and functions of CHWs by division so that health policy makers may consider in refining their roles in relation to geography and changing environments. A number of findings of this study should be noted in revamping the CHW program of Fiji.

First, the respondents perceived their roles differently by division. For example, CHWs in the Central division have a low priority on family planning services and first aid services, 48.4% and 45.2% respectively, than other services such as promoting wellness (93.6%). This may imply that CHWs in urban areas receive more pressure for providing wellness services as community members have easier access to health centres and hospitals where they can seek quality consultative services from health professionals than people in other divisions do. However, CHWs in rural areas such as the Northern and Eastern divisions seem to provide multiple roles to complement health centres that are less accessible (77.8% and 80.7%, respectively for providing first aid service). Unlike the Central division which is predominantly urban, the Northern and Eastern division populations are more dispersed across islands. This may result in high reliance of the community on services provided by CHWs, particularly for first aid services. The current role delineation guideline sets a uniformed set of tasks for CHWs, referring to these findings, the tasks proposed for CHWs need to be differentiated to fully respond to diverse demands by divisions and urban/rural settings.[21] In addition, MHMS has been addressing promoting wellness to tackle rapidly-increasing NCDs such as diabetes and cardio-, cerebrovascular diseases that were shown in the annual report.[3] A systematic review conducted by Abdel-All et al.[23] demonstrates that

CHWs can be trained for CVD prevention and management, but the effectiveness of the program is inconclusive as it depends on national contexts and study design. In order to verify the effectiveness of the Fiji CHW program for NCDs prevention and management, further studies need to be conducted with the context that CHWs are integral primary health care workers in remote rural areas.

Secondly, a third of the subjects were found to be in their position for less than 3 years. This implies that many CHWs do not stay long enough in the role which, in turn, contributes to fragmented service delivery at community level. This high turnover rate might be related to the imbalance of high demands from the community and less rewards from the community and health systems to CHWs. This turnover rate leads to increase of additional resources needed for MHMS to train new CHWs. A lack of training may result in the reduced performance of CHWs, in consistent coordination with zone nurses and eventually incomplete inclusion to health systems. There has been research on high attrition rate of CHWs and how to retain a certain volume of CHWs to ensure quality and basic health services.[24-27] Most of literature was conducted with the African countries' context, it was identified that ongoing training, feedback including proper supervisory visits, and peer support are important to maintain the cadre of CHWs.[24] A third of the subjects responded that they have supervisory visits of zone nurses 4 times a year. As a study in 2011 identified, a strengthened supervision for CHW can ensure a well-performing CHW.[16] With regard to the supervisory visit, setting clear lines of supervision and reporting should be addressed. Our study demonstrated that a half of the subjects responded that the *Turana ni Koro* (a chief of a Fijian village) was their supervisor while others stated zone nurses or health centres as their supervisors. Since many CHWs also function as secretaries for the village health committee, the *Turana ni Koro*, as head of the committee, can often direct CHWs according to their health priorities. This dual supervision system may burden CHWs due to reporting.

Thirdly, the findings suggest that a financial incentive is not the most desired driver for CHWs. Only 22.6% of all subjects stated that financial incentive would be a driver for performing their roles. On the other hand, 61.3% of all subjects responded that they consider improved knowledge and skills as a driver. It suggests that the CHWs might value knowledge and competencies gained during the services and trainings more than financial incentives. So, MHMS may consider providing quality training programs as an incentive for CHWs. A study from Tanzania demonstrated that both financial and non-financial incentives such as a recognition and respect from the community, changes in social prestige may work as contributing factors to the retention of CHWs.[25] A study that engaged CHWs from 3 African countries, Burkina Faso, Nigeria, and Uganda also identified that community recognition and opportunities for training and supervision work as major incentives in all countries.[28] In short, a financial incentive may not be working as a sole contributing factor to the retention of CHWs and the finding of this study supports that non-financial incentives have a substantial influence on CHWs to remain in their positions.

It is noteworthy that a few CHWs identified the existence of pooled funds to support patient transportation in emergency (19%). Many CHWs mentioned financial hardships when they had to refer patients to nearest health facilities. The survey findings suggest that some patient referral or transport from communities to health facilities should be supported by the formal health system. Some villages in the Northern division showed an example of how the community and other stakeholders can support patient transportation. A number of villages in the North accumulated funds by receiving donations from the men who worked in formal

employment and from donations from local non-governmental organisations. Although the survey could not estimate the average cost of transportation, the amount of cost for patient referral from communities to health facilities can be included in the CHW's reports to zone nurses. This will allow to monitor the volume of patient refer and financial expenditure spent in referral process.

A number of limitations of this study should be noted here. Firstly, we used the CHW database to select the study subjects but a proportional and random sampling method was not applied to this study as logistical arrangements to access to nursing stations and CHWs' office were limited. It limits the generalizability of the findings demonstrated in this study. In order to ensure the representativeness, a study design using a systematic sampling method is warranted. Secondly, this study used a questionnaire developed by the research team with information from the CHW training manuals developed by MHMS, especially for competency assessment. It may restrict the findings of this study within the context of Fiji. To be able to provide cross-country comparison in the Pacific where CHWs exist, future studies need to review and adopt a standard questionnaire on competency set of CHWs in the region. Thirdly, we did not recruit study subjects who have quit from the service of CHW to compare socioeconomic factors and their perceptions on incentives and the reason of attrition. If a historic CHW database can be used in designing a nationwide survey for CHW, a case control study method may contribute to better understanding on attrition and retention of CHWs. Fourth, we interviewed only CHWs but did not include zone nurses managing CHWs to ask about their opinions on the retention of CHWs. A future study is needed to include zone nurses as they provide supervisions to CHWs and they may work as a factor to retain CHWs.

This study sought to find updated information of CHWs on working condition, competency and their perceptions on incentive programs as MHMS revamps the program. Since the subjects collected in the sample were not randomly selected, a careful interpretation of findings should be taken. However, as this study covered 4 divisions with many key informants from villages and settlements, it presented various responses in consideration of different geography and environments. In accordance with issues addressed in the costing study,[6] this study underscores substantial needs of differentiating roles/functions of CHWs by different geographical settings in consideration of varying access to health facilities.

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