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## Research Article

# Obstetrics Characteristics and Adverse Outcomes of Teenage Pregnancy Cases Presented to Colonial War Memorial Hospital (CWMH) in Suva, Fiji: A Retrospective Study

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### Abstract

**Introduction:** Teenage pregnancy has been a subject of public concern for many years. Approximately, 14 million children worldwide are born every year to young unmarried women aged 15–19. Reports show 2% increase in the incidence of teenage pregnancy in Fiji from 5.5% in the year 2000 to 7.5% in 2004. **Aims:** This study aimed to describe the obstetrics characteristics and adverse outcomes of the teenage mothers presented to Colonial War Memorial Hospital (CWMH) in Suva, Fiji and their adverse outcomes within 2008 to 2012. **Methodology:** A retrospective descriptive study was conducted among teenage mothers aged 13 to 19 years who were delivered at CWMH in Suva within 2008 to 2012 were included in this study. The demographic and obstetric characteristics of participants who met the study inclusion criteria were collected from the Birth Registries and patient information system (PatisPlus) and were analyzed using SPSS. Ethical approve was obtained from the relevant ethical parties before collecting the data. **Results:** Majority of teenage mothers aged more than 15 years (98.03%) and more than two thirds of teenage mothers (69.7%) were indigenous Fijian. The majority were pregnant for the first time with a total of 2379 (87.2%) and 88.4% had one live born baby each by the time of this study. More than 3/4 (79.4%) were at term when presented for delivery and 88.6% had had normal vaginal deliveries. Majority of teenage mother (90.2%) had infant with normal weight, 233 (8.54%) had premature rupture of membrane (PROM), and 9.5% cases had augmented labor. The most common adverse outcome encountered by these young women in Postnatal Complication was perinatal deaths (5.02%).

**Conclusion:** This study highlighted the characteristics of the young women in this study that the geographical location from where the study participants came can help health care providers point to where health interventions should target.

**Keywords:** Teenage pregnancy; Retrospective study; Obstetric traits; Adverse outcomes; Fiji

### Introduction

Adolescent is a period in human development between the onset of puberty and adulthood. Many adolescents face pressures to use alcohol, cigarettes, or other drugs and to initiate sexual relationships at earlier ages, putting themselves at high risk for injuries, unintended pregnancies, sexually transmitted infections (STI's) and Human Immunodeficiency Virus (HIV). Teenage pregnancy refers to a teenage girl, usually within the age of 13-19, becoming pregnant. The term in everyday language refers to girls who have not reached legal adulthood who become pregnant [1]. Teenage pregnancy has been a subject of public concern for many years [2]. Teenage pregnancy occurs worldwide but the rate varies from country to country. Even though the focus is directed towards developing countries, since they are the ones suffering the most, studies have stated that it remains a problem in the industrialized world [3] such as the United States [4].

About half of the world populations are under the age of 25 and most of them have become sexually active before they turn 20. It is estimated that 10-40% of young unmarried girls have had an unintended pregnancy (what years and where?). Approximately, 14 million children worldwide are born every year to young unmarried women aged 15–19 [1]. Teenage pregnancies are considered problematic because complications from pregnancy and childbirth are the leading causes of death in teenage girls aging between 15 and 19 years

in developing countries [3]. It is a high risk pregnancy and these include physiological, obstetric and psychosocial risks [5].

From the Pacific region, teenage pregnancies in Vanuatu, Solomon Island, Papua New guinea, Kiribati and Marshall Islands are among the highest in the world [6,7]. Fiji is a multi-ethnic island nation in the South Pacific that accommodates 56.8% Fijians, 37.5% Indians and few others that include Asians, Europeans and Pacific Islands. Adolescence (Aged 10-19) takes 19.3% of the total population [8] and teenage pregnancy is one of the major issues or challenges of Adolescents Health and Development (AHD) in the Pacific and in Fiji [9]. Mahajan [5] has mentioned a 2% increase in the incidence of teenage pregnancy in Fiji from 5.5% in the year 2000 to 7.5% in 2004.

Adolescence is a period of significant transition for young people. During this time, teenagers experience rapid physical, intellectual and psychosocial change at a pace unrivalled by any other period in their development except infancy. Some teenagers appear to manage these changes effortlessly, while others struggle. All teenagers, nonetheless, need support and those in the best position to help them are most often their parents [10].

Due to the importance of issue and lack of previous conducted study about teenage pregnancy this retrospective study aims to describe the obstetrics characteristics and

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adverse outcomes of the teenage mothers presented to CWMH in Suva, Fiji and their adverse outcomes within 2008 to 2012.

## Methodology

This retrospective descriptive study was conducted from January 2008 to December 2012 at CWMH in Suva, as the largest hospital in Fiji. All teenage mothers aged 13 to 19 years who were delivered at CWMH within 2008 to 2012 were included in this study. Using a check list, all the information related to participants such as socio-demographic (age, ethnicity, marital status, religion and address), and obstetric variables (Gravida, parity, gestational age, infant birth weight, type of delivery, abnormalities) were extracted from the medical records.

The Birth Registries and patient information system (PatisPlus) were two hospital health information systems were used to collect all relevant information in regards to teenage mothers' details and delivery records.

All extracted variables from medical records were entered Microsoft excel 2010. Socio-demographic characteristics and obstetric variables data of the teenage mothers under study were summarized using count, percentage. SPSS version 21 was used for performed all analysis and the results were presented as the frequency and percentage.

This study was approved by the College Health Research and Ethics (CHREC) Committee and the Fiji National Health Research Committee (FNHRC). The researcher seeks permission for the data collection by presenting the ethical approval and letter from Department of Public Health to the Maternity Unit Medical Superintendent. Endorsement from the Medical superintendent was obtained and presented to the Maternity Unit Medical Record and birth registries were made available for the commencement of this data collection process.

## Results

There were 40003 total deliveries at CWM Hospital in which 2727 (6.8%) were teenage mothers. Majority of teenage mothers aged more than 15 years (98.03%). More than two thirds of teenage mothers (69.7%) were indigenous Fijian, 49.9% were Single mothers and 75.2% were Christian (Table 1).

Table 2 shows the obstetric characteristics of teenage mothers. The majority were pregnant for the first time with a total of 2379 (87.2%) but surprisingly 19 (0.7%) of them came for their third time and 1 teen mother was pregnant for her fifth time during this study. It is also revealed that 2410 (88.4%) have one live born baby each while 249 (9.1%) have had two by the time of this study and 10 (0.4%) of these young women at a teen age already have three live births.

The results of the study also revealed that 2165 (79.4%) were at term when presented for delivery. However, about 272 (10.0%) could not complete and delivered before term as preterm deliveries and 261 (9.6%) went beyond the term period and delivered late term. Record shows that 19 (0.7%) mothers had miscarriages. Results also showed that majority of these teen mothers (88.6%) have had normal vaginal

deliveries and about 11.4% of these young teen mothers went through operation or caesarean section to remove their babies. This is not a good outcome to a young teenage mother. Majority of teenage mother (90.2%) had infant with normal weight while 1.3% and 1.4% had infant with very low and extremely low birth weight, respectively.

Characteristics	Frequency	Percentage
<b>Age group</b>		
13 - ≤ 15	54	1.98
>15 - 19	2673	98.02
<b>Ethnicity</b>		
Fijian	1902	69.7
Indian	647	23.7
Others	178	6.5
<b>Marital status</b>		
Single	1360	49.9
Married	1357	50.1
<b>Religion</b>		
Christian	2050	75.2
Hindu	501	18.4
Muslim	129	4.7
Others	47	1.7

**Table 1:** Socio-demographic characteristics of teenage mothers, 2008-2012 (n=2727).

	Frequency	Percentage
<b>Gravida (n=2727)</b>		
1	2379	87.2
2	328	12.0
3+	20	0.7
<b>Parity (n=2727)</b>		
0	58	2.1
1	2410	88.4
2	249	9.1
3	10	.4
<b>Gestational Age (n=2717)</b>		
Term	2165	79.7
Preterm	272	10.0
Lateterm	261	9.6
Miscarriage	19	0.7
<b>Type of delivery (n=2717)</b>		
<sup>a</sup> NVD	2415	88.6
<sup>b</sup> AVD	60	2.2
<sup>c</sup> LSCS	252	9.2
<b>Infant birth weight (n=2457)</b>		
Normal	2457	90.2
low	194	7.1
Very low	35	1.3
Extremely low	37	1.4
<sup>a</sup> Normal vaginal delivery, <sup>b</sup> Assisted vaginal delivery, <sup>c</sup> Lower segment caesarean section		

**Table 2:** Obstetric characteristics of teenage mothers, 2008-2012.

Table 3 shows adverse outcomes or complications among teenage pregnant. The results showed that 233 (8.54%) had premature rupture of membrane (PROM). 154 (5.65%) had anemia and 153 (5.61%) had gestational hypertension. 14

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(0.51%) mothers had Antepartum Hemorrhage (APH). There were 111 (4.07%) cases who had Intra Uterine Growth Restriction (IUGR) and 70 (2.57%) presented with mal presentation.

Outcomes	Frequency	Percentage
<b>Antenatal Complication</b>		
<sup>a</sup> PROM	233	8.54
Anemia	154	5.65
Gestational Hypertension	153	5.61
<sup>b</sup> IUGR	111	4.07
Malpresentation	70	2.57
<b>Intra-partum</b>		
Augmented labor	259	9.5
<sup>c</sup> IOL	173	6.34
Prolonged labor	20	0.73
Perineal tear	14	0.51
<b>Postnatal Complication</b>		
Perinatal deaths	137	5.02
<sup>d</sup> PPH	43	1.57
<sup>a</sup> Premature Rupture of Membrane, <sup>b</sup> Intra Uterine Growth Restriction, <sup>c</sup> Induction of labor, <sup>d</sup> Postpartum hemorrhage		

**Table 3:** Adverse outcomes of teenage pregnancy (n=2727).

The results also revealed that 259 (9.5%) cases had augmented labor which means that those mothers had labor spontaneously but were given medication to enhance or facilitate the process. 173 (6.34%) cases been Induction of labor (IOL) who induced to start labor or known as induction of labor. Apart from being augmented, 20 (0.73%) cases were found to have prolonged labor and in this study, obstructed labor was also classified as prolonged labor. Only 14 (0.51%) mothers experienced perineal tear during delivery.

The most common adverse outcome encountered by these young women was postpartum hemorrhage (PPH) and deaths. PPH means bleeding of more than 500 mls from the vaginal tract either within the first 24 hours (primary) or after 24 hours (secondary) and table 15 shows that 43 (1.57%) cases experienced PPH. It is interesting to find out that within these 5 years, there were 137 (5.02%) perinatal deaths and these include intra-uterine fetal deaths (IUFD), stillbirths, and neonatal deaths.

## Discussion

The current study has found the incidence of teenage pregnancy at CWMH for the 5 years period was 6.8%. The incidence of teenage pregnancies varies dramatically between the different countries. Approximately 90% of the teenage births occur in developing countries [11]. A comparative study of teenage pregnancy by Mahavarkar et al. [12] in India reported an incidence of 10% from 2000–2001, while United Nations Population Fund (UNFPA) reported 85 for every 1,000 cases in Marshall islands and 6-8% from Nauru, Papua New Guinea, Solomon islands and Vanuatu [13]. Tonga usually have around 130 teenage mothers delivered in hospital each year from 2001-2003 [13]. The Republic of Marshall Island (RMI) still remains the highest compared to other

Pacific island countries but this result shows similarities among the Melanesian countries including Fiji with a maximum of 8.12% in 2006.

Pre-labor rupture of membrane was the most common antenatal complication found among these teenage mothers and this is important because infection can ascend via vaginal tract to harm both mother and the fetus and may lead to increase chance of preterm delivery. Teenage pregnancies carry a higher risk of preterm deliveries and the risk is double if mother had PROM [11]. As noted in many earlier studies, teenagers were significantly more likely to deliver prematurely and results showed that they were even more likely to have extremely premature labor [14]. This is well supported by an investigation about the risk of adverse outcome among adolescents; A multi-country study by WHO where they found out mothers aged 10-19 had higher risks of preterm deliveries compared to mothers aged 20-24 years [15]. Prevention of teenage pregnancy can minimize the risk associated with PROM such as preterm deliveries. Other antenatal adverse outcomes found to be lower compared to earlier study at CWMH in 2007. The risk of pre-labor rupture of membrane (PROM) in that study was non-significantly higher in teenagers compared to older age group [5]. APH and mal-presentation were not that significant and Anemia and gestational hypertension were almost similar in proportion but again, lower than the 2007 findings. IUGR was still observed among the teenage mothers in this study and this explained not only effect of hypertensive disorders during pregnancy but can be a biological immaturity impact resulting in growth restriction of offspring [3]. Several studies have supported this finding; there is high risk of serious obstetric complications and poor neonatal outcomes such as Pre-eclamptic Toxaemia (PET), anemia and assisted deliveries [16].

There were four major intra partum adverse outcomes highlighted from this result and augmented labor was found to be the highest amongst all. This is basically giving medication to strengthen the power of uterine contraction enhancing the process of labor if found to be prolonged and slower than the appropriated time. In a comparison between teenagers and adult women, a significant increased risk of prolonged labor (defined as labor lasting >18 hours) among teenagers was observed and this explained the increased rate of labor augmentation [5]. However, the current result still shows lower rate of labor augmentation and from the result, there was a lower percentage of prolonged labor that would need augmentation. Perineal tear was one of the most common intra partum complications found in 2007 but it is found to be statistically lower in the current study.

After delivery, the most common adverse outcomes identified in this study were Postpartum Hemorrhage (PPH) and perinatal deaths. This study shows lower rate of PPH compared to previous study at CWMH. The likelihood of having post-partum hemorrhage and need for blood transfusion was more among the teenagers but the difference was few and probably due to the fewer number of cases having those outcomes [5]. This is most likely the result here as well because only 1.57% of all the 2727 teenage mothers had PPH.

Perinatal deaths were more significant than PPH and this marks the need for reduction in the incidence of teenage

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pregnancy. The risks can be detected early and some deaths would have been prevented if antenatal care was adequate [17]. Several studies have emphasized the importance and the need to strongly support teenage mothers to attend antenatal care as early as possible [16]. The comparison by Mahajan [5] at CWMH earlier stated that perinatal deaths were not significantly different in the teenage group and the adult women group. Perinatal deaths seems to be similar but it may be preventable in teenagers if antenatal care was provided early because a study in South Asia has observed that most teenage mothers seek antenatal care late due to the some socio-economic reasons [18].

However this study is the first study conducted about teenage pregnancy in Fiji, it had some limitations. In this study we only used the birth registries and electronic health information system but not the patient's folders. All records from 2008 were already discarded hence not available and as a result the researcher relied on registry and electronic patient information system. There were still some missing data in the records used for this study. Although the missing data was not statistically significant, the researcher had to use other sources such as the electronic patient information system for triangulation purposes.

## Conclusion

The rate of teenage pregnancy remains increase in I-Taukei (indigenous Fijian). This study highlighted the characteristics of the young women in this study that the geographical location from where the study participants came can help health care providers point to where health interventions should target. Adverse outcomes observed from these 5 years period shows that teenage pregnancy remain a high risk pregnancy and health services should be redefined according to characteristics of these young women. Antenatal care is highly needed to lessen the risks by early detection and early management of complications. Health interventions such as counselling services and health education, social and psychological support should focus those at extreme young age group because they are biologically, physically and mentally affected.

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