RESEARCH PAPER

INCIDENCE AND OUTCOMES OF TEENAGE PREGNANCIES IN THE ESTATE SECTOR IN THE RATNAPURA DISTRICT, SRI LANKA

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Abstract

Background: Teenage pregnancies are one of the major underlying causes of maternal morbidity and mortality. It prevents girls from achieving their goals in life.

Objective: To study the incidence and related outcomes of teenage pregnancies in estate communities in the Ratnapura district.

Methods: A descriptive study was conducted among 346 women who got pregnant within the period of one year from 1st January 2015 to 31st December 2015. The women were selected by cluster sampling technique from all the estates in the district. Data were collected by trained health volunteers using an interviewer administered questionnaire. Incidence of teenage pregnancies was expressed in percentage with 95% confidence interval. Pregnancy outcomes between teen and non teen mothers were compared using chi-square test.

Results: Incidence of teenage pregnancies among the study group was 10.1% (95% CI=7.7, 12.52). Of them 22.9% (n=8) were below 18 years and not legally married.

Among pregnancy outcomes, significant statistical association was observed for problems encountered in breast feeding within the first 48 hours of delivery (p=0.009), for satisfactory weight gain within first month (p=0.009) and whether the mother started a modern family planning method at six weeks after delivery (p=0.007). However, statistical association could not be observed for outcome of pregnancy whether live birth or abortion (p=0.055), starting breast feeding within one hour of delivery (p=0.961) and whether the newborn gets complications within 48 hours of delivery (p=0.237).

Conclusions: High incidence of teenage pregnancies with associated disadvantages to the newborn and the mother in estates warrants identification of risk factors in future studies to design preventive programmes to improve maternal and child health in estates.

Key words: *teenage pregnancy, incidence, outcome, estate sector*

Introduction

Teenage pregnancy is defined as a pregnancy occurring before the 20th birthday of a particular female[1]. They can occur in legal marriages as well as among cohabiting couples or unmarried couples. In Sri Lanka, the legal age at marriage depends on the legal system and the religious system, where the age at marriage is 18 years by law[2], by the religion as 13 years for moors. However, it is evident that the teenage pregnancies which occur within legal marriages are more secure than others who do not bear the legal responsibility for the pregnancy and child rearing by the male partner[1].

Globally, the incidence of births among women between 15-19 years is around 11%. The vast majority of these births (95%) occur in low- and middle-income countries[3]. According to the 2014 World Health Statistics, average global birth rate among 15 to 19 year olds is 49 per 1000 girls. Country rates range from 1 to 299 births per 1000 girls, with the highest rates in sub-Saharan Africa[4].

However, the incidence of teenage pregnancies should be much higher than this because annually, around 3 million girls undergo unsafe abortions. Among 21 countries with liberal abortion laws and completed teen pregnancy estimates for 2008 - 2011 available, the highest rate of teenage pregnancies was in the United States (57 pregnancies per 1,000 adolescents in 2010), followed by New Zealand (51) and England and Wales (47). Adolescent pregnancy rates were far higher in Mexico and the Sub-Saharan African countries than in any other countries in this review, ranging from 121 (Ethiopia) to 187 (Burkina Faso) [4].

According to the combined work by UNFPA and Family Health Bureau, rate of teenage pregnancies in Sri Lanka was found to be 6.5%. This study further identified that the highest percentage of live births to females under 19 years was seen among the Sri Lankan Tamils living in rural and estate sectors. Considering the geographical distribution, the Eastern province had the highest teenage pregnancy rate of 10.2% while Central province had the lowest rate of 4.1%. District wise, Trincomalee district had the highest rate (13.8%) while Kegalle district had the lowest rate (1.2%)[5].

This study also identified that the rate of teenage pregnancy was highest among the women who didn't have school/primary education (16.9%) and lowest among those who had an education up to GCE Advanced Level or above (2.3%). Teenage pregnancies were also associated with poor economic status. Another important finding was that only 39% of pregnant teenagers had received services from the Public Health Midwife after marriage prior to the current pregnancy. Of those who received services, only 62% had received advice on planning a pregnancy[5].

Occurrence of a teenage pregnancy is a social and health disadvantage globally and nationally[1]. Outcome of teenage pregnancies differs significantly according to the socio economic development of countries. In more developed countries where initiation of sex in early life is common but induced abortion is legalized on broad grounds to regulate fertility with availability of safe abortion services, occurrence of teenage pregnancies are high but deliveries to teenage mothers are less due to induced abortions. In less developed countries with poor socio economic status, early marriages are common with more pregnancies because family planning services do not cater sufficiently to teenagers. Hence, more deliveries occur with lot of adverse outcomes due to poor health care services and unsafe induced abortions[3].

This study was conducted with the objective of studying the incidence and outcomes of teenage pregnancies in the estate sector in the Ratnapura district

Materials and Methods

This community based descriptive cross sectional study was conducted in all estates in the Ratnapura district in the Sabaragamuwa province of Sri Lanka. The population of Ratnapura district is 1226916 and 107527 of that dwell in estates.. The estate sector in Ratnapura district consisted of 58 estates, governed by the plantation trust[6].

The study population consisted of women who got pregnant between 01st July 2015 and 31st December 2015 in estates in the Ratnapura district, whose usual residence was within the estate sector during the period of the survey.

Sample size was calculated based on the findings of the incidence of teenage pregnancy in the survey conducted by UNFPA (13.8%)[6]. The calculated sample size for random sampling of 173 was subjected to correction for design effect of the cluster sampling technique[7,8.] The adjusted sample of 350 was selected from 70 clusters with 05 participants in each cluster. Primary sampling unit was the estate. Selection of clusters was based on probability proportion to size of each estate.

Data was collected by trained health volunteers using a pre tested Interviewer Administered structured Questionnaire (IAQ) and completed within a period of 10 weeks.

The validity of the instrument was ensured by constructing after careful literature survey, reviewing by experts in the field of investigation, by agreement of the field level managers of maternal care. The questionnaire was introduced both in Sinhala & Tamil languages whenever relevant, with informed written consent of the participants or the guardians by trained data collectors ensuring uniform data

Table 1: Association of pregnancy outcomes between teenage and non-teenage mothers

Variable	$\chi 2$	P value
Outcome of pregnancy that teenage mothers having high risk of abortion & still birth	2.61	0.10
Possibility of teenage mothers having a baby with birth weight being less than 2.5kg	3.672	0.055
Not starting breast feeding within one hour of delivery by teenage mothers	0.0024	0.961
Possibility of newborns of teenage mothers getting complications within 48 hours of delivery	1.369	0.237
Possibility of teenage mothers encountering problems in breast feeding within first 48 hours of delivery	6.652	0.009
Not gaining satisfactory weight within first month by babies of teenage mothers	6.71	0.009
Teenage mothers not starting modern family planning method at six weeks after delivery	7.2603	0.007

collection at the place of residents achieving highest possible response rate. Data collection was completed within a period of 10 weeks.

Study was conducted under the ethical approval of the Ethical Review Committee of the National Institute of Health Sciences, Kalutara, Sri Lanka.

Results

The response rate was 98.9% (346 participated).Of them, 31 were teenage mothers giving the incidence of teenage pregnancies among the study group as 10.1% (95% CI=7.7- 12.52). Among them 22.9% (n=8) were below 18 years and not legally married. Out of the teenage pregnancies, 20 were unplanned while only 3 out of 31 have used family planning in their lives. The main reason stated for not using a family planning method was poor knowledge about family planning methods (65%) while 20% gave the reason of non availability of modern family planning methods closer to them.

Teenage mothers were significantly more likely to encounter problems in breast feeding within the first 48 hours of delivery (χ^2=6.652; p=0.009). Babies of teenage mothers were unable to achieve a satisfactory weight again within the first month of life (χ^2=6.71; p=0.009). Further, teenage mothers were more likely not to start a modern family planning method at the end of the post partum period (χ^2=7.2603; p=0.007).

However, among the pregnancy outcomes, similar rates of live births or abortions were seen among both teen and non-teen mothers (χ^2=2.61; p=0.10). Further, the rate of low birth weight and birth complications within 48 hours of birth also showed no difference between teen and non teen mothers (χ^2=3.672; p=0.055 and χ^2=1.369; p=0.237 respectively). The rate of commencing breast feeding within one hour of delivery was similar among the two groups (χ^2=0.0024; p=0.961).

Discussion

Considering the rate of teenage pregnancies, findings of the current study are higher than the findings revealed in district health survey (DHS) 2006/7 (6.4% vs 10.1%). But it is closer to the level of teenage pregnancies reported from the Eastern province 10.2%[5].

According to the reporting in the Reproductive Health Management Information System, teenage pregnancies show declining trend in the country except for Vavuniya, Ampara, Trincomalee, Anuradhapura and Polonnaruwa districts. It has further reduced from 5.3% in 2013 to 4.8% in 2016 in the country. Considering the district variations, Jaffna and Mannar districts have reported teenage pregnancies less than 3% while Trincomalee and Batticaloa have reported as 8.5% and 8.2% respectively being the highest in the country. The Ratnapura district also showed a reducing trend having 6.07% and 4.82% in the years 2013 and 2016 respectively[9].

According to the latest evidence in Sri Lanka DHS 2016, the rate of teenage pregnancies had further declined that only 3.6% of the women in the study had begun childbearing before 20 years. Neither the district variations nor the sector variations were assessed in this study. However, the definition of teenage pregnancy used in DHS was up to 19 years[10]. This factor may have contributed for having lower levels of teenage pregnancies in DHS 2016.

The lesser penetration of health care and health information to the estate sector may have contributed to the higher rates of teen age pregnancies. Fernando et al in a study conducted in the three districts of Colombo, Batticoala and Anuradhapura using data

from birth registrars identified that the highest percentage of live births to females 19 years and under were among Sri Lankan Tamils (7.4%) in 2006. The major ethnic group in the current study (97.2%) was also Tamils. The previous study also reported general data from all districts of Sri Lanka and this gave the proportion of teenage pregnancies in the Ratnapura district as 6.5% according to registrar general data and 7.7 % according to data reported by the public health midwives (PHMs).

Even in the DHS 2006/7, estate sector had the highest rate of teenage pregnancies in Sri Lanka (7.3%) while that of in the Rathnapura district was 8.8% [11]. However, all these sources may not have included terminated teenage pregnancies leading to under reporting the true picture because even in the current study, 3.2% (one case) of the participants has got the pregnancy terminated.

The legal age of marriage in Sri Lanka is 18 years. Therefore, teenage mothers below 18 years of age are likely to be cohabiting with their partners without a legal marriage. In the current study nearly one fourth of mothers were unmarried. Fernando et al had identified this to be 17% in their study[11]. The male partner not having a legally bound responsibility on the child and the mother exerts a higher pressure on the teenage mothers. The estate sector being one of the most under privileged sectors in the country, both financially and in health care worsens this scenario.

Twenty one of teenage mothers in the study (67.7%) had unplanned pregnancies. This highlights the need for the provision of modern family planning for sexually active teens, particularly as teenage pregnancies are known to be associated with adverse pregnancy outcomes[12]. Sixty five percent of those with unplanned pregnancies did not know about family planning methods although each estate has an allocated PHM. This highlights the need for continuous training, supervision and monitoring of the PHMs.

The DHS do not provide data on pregnancy outcomes and possible pregnancy terminations. The present study found one teenage pregnancy resulting in a termination. This area needs further exploration possibly with qualitative study designs.

Teenage pregnancies are known to be associated with poor pregnancy outcomes. However, the inability for the current study to identify such a relationship maybe due to the relatively low sample size. It was unable to elicit statistically significant association between the birth weight and the teenage pregnancies. In Sri Lanka, 99.9% deliveries take place in hospitals and the breast feeding practices have been recognized as one of the best practices in the world. Hospital staff helps to initiate the commencement of breast feeding as a routine practice. This may have contributed to the similar rates of commencement of breast feeding among the teen and non-teen mothers. Furthermore, the high rate of hospital deliveries would have also contributed to the similar pregnancy complications among the two groups. However, statistical association could be observed for encountering problems in breast feeding within first 48 hours of delivery by teen mothers compared to non teen mothers (χ^2=6.652; p=0.009). Furthermore, the weight gain by babies born to teen mothers was unsatisfactory within the first month (χ^2=6.71; p=0.009). A teenaged mother is a child herself and is unlikely to have the maturity and experience to breastfeed and care for a new born baby. These problems may be contributed by the absence of trained staff adequately to handle these mothers and newborns with special attention. Practices within 48 hours of delivery are mainly dependent on the service provision of the hospital staff. Parameters for care within 48 hours of delivery were similar among teen and non teen mothers while long term care

seems to be lagging among teen mothers. These highlight the need to improve the family support network and care provided by the PHMs in the post-natal period.

Similarly, significant statistical association could be observed for the mother not starting a modern family planning method at six weeks after delivery by teen mothers (χ^2=7.2603; p=0.007). Since most of teen mothers select a family planning method for the first time only after the delivery, they would not be commencing a method if services are not provided by the PHM adequately. This also highlights the inadequate post-natal care by the estate PHM and the need to strengthen their services The findings of the current study raises the question of adequacy of domiciliary care in relation to all the levels of maternal care. High teenage pregnancy rate indicates poor pre conception care. Further, 67.7% of teenage pregnancies were unplanned, and 65% of them were unaware about the possibility of preventing the unplanned pregnancy by using modern family planning methods. At the same time inadequate provision of post natal care is evident by the fact that most of them were not using family planning methods at the end of the post partum period.

Conclusions and recommendations

High incidence of teenage pregnancies with comparatively higher post-partum issues to the babies in estates warrants identification of risk factors in future studies to design preventive programmes to improve maternal and child health in the estates of Sri Lanka. Special programmes needed to improve the provision of domiciliary care by PHM.

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