Extent, Trends and Determinants of Teenage Pregnancies in Three Districts of Sri Lanka

Ministry of Health

Family Health Bureau

United Nations Population Fund

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Extent, Trends and Determinants of Teenage Pregnancy in Three Districts of Sri Lanka

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Executive Summary

Teenage pregnancies are becoming a major concern in Sri Lanka, with 6.5 percent of the total pregnancies registered during 2009 being in this age group. In view of the negative foetal, obstetric and social consequences associated with teenage pregnancies, it is necessary to develop effective interventions. In order to design interventions identification of factors contributing to teenage pregnancies is mandatory. This study was carried out, to describe the prevalence, trends and district differentials in teenage pregnancies using available data and to describe the underlying social, behavioral and other factors that influence/lead to teenage marriage and pregnancy. A cross sectional comparative study design was used.

Data for the years 2000-2006, available from the Registrar General's Department indicate a declining trend in the percentage of births to women aged 19 years or less. Comparisons show that the rate was high in the rural and estate sectors and among Ceylon Tamils. Marked inter district differences were seen. Ten districts including all districts in the Eastern Province showed consistently high percentages of such births and six districts showed consistently low values.

Data from the Reproductive Health Management Information System for the year 2007-2009 show a declining trend in the percentage of pregnant mothers with an age less than 20 years. A decline is seen in all districts, with the exception of Vavuniya, Ampara, Trincomalee, Anuradhapura and Polonnaruwa. No data were available for the districts of Kilinochchi and Mullaitivu for the years 2009.

The DHS 2006/07 show that 6.4% of females aged 15-19 years have started childbearing. The Eastern province had the highest teenage pregnancy rate of 10.2% and Central province, the lowest rate of 4.1% among the eight provinces included in the survey (Data for the Northern Province were not available). Percentage of teenage pregnancies declined significantly with increasing levels of education and with increasing wealth quintiles.

A total of 510 teenage mothers were included in the community based study with 41% of them being from the Colombo district, 34% from Batticaloa and 24% from Anuradahapura. Almost 80% of teenage pregnant females had been educated up to grades 6-11. Of the total group, 83% were legally married while 17% were co-habiting. Only 7% of teenage females were economically independent. A third of the mothers of teenage pregnant females were educated up to a grade less than 6 and another 39% having being educated up to grades 6-11. Of them, nearly one third had worked abroad.

Of those who stated that their pregnancies were 'unplanned', 69% reported that they did not practice any method of family planning. The commonest reason given was lack of knowledge of family planning methods (39%) while another 29% indicated that there was 'opposition from the spouse'. Of the respondents, 98.5% knew the Public Health Midwife and a high percentage knew how to meet her. However, only 39% has obtained her services.

The risk factors for teenage pregnancy were examined by comparing the characteristics of teenage pregnant females with a group of non-pregnant teenage females of the same age category within the same Medical Officer of Health (MOH) area. The results indicated that lower level of education of the teenagers and instability of the place of living were significant risk factors that led to teenage pregnancies. An increased risk for teenage pregnancy was observed when the ethnicity of the women or the spouse was Muslim and/or were followers of the Islamic faith.

The risk of a teenage pregnancy was significantly high when the mother or father of the teenagers had lower level of education or mother had ever worked abroad. Family characteristics that were significantly associated with a higher risk for teenage pregnancy included, a lower level of strictness in the family, lack of freedom within the family to discuss problems regarding love affairs and issues related to sexuality. Risk of teenage pregnancy was also high when the level of support from teachers and peers were 'poor' or 'very poor' as perceived by teenage females.

Pregnant teenagers' knowledge on fertility, reproduction and contraception was significantly higher than in non-pregnant teenagers possibly due to the knowledge acquired during pregnancy. In contrast, pregnant teenagers were less aware about disadvantages of teenage pregnancy than their non-pregnant counterparts. Non-use of contraceptives was found to be a predictor of teenage pregnancy, and the fear of side effects was the main reason for non-users.

Findings from the qualitative component of the study showed much variation between the three districts and identified the necessity to develop need based interventions as appropriate for each district. Availability of family planning services to teenagers (even to married females) was limited. A high level of unmet need for family planning was seen among married teenagers and was seen to be due to myths as well as reduced accessibility. Most pregnancies were unplanned. Generally male partners and their families readily accepted the pregnancy compared to the female partners and her family.

Familial tendency for teenage marriages was present in all districts and was associated with low level of parental supervision, mother's employment overseas, heavy alcohol use of the father and lower socio economic status. One of the factors that were seen to have an influence on behaviour initiating early intimate relationships was the use of mobile phones. The main provider of ante natal care is the field clinic of the MOH and the first contact person in the health system was the Public Health Midwife. Limitations posed by the legal system, inadequate sexual and reproductive health (SRH) information disseminated within the school curriculum, low coping and problem solving skills at family level, were also identified as important factors influencing teenage pregnancies.

As circumstances leading to teenage pregnancies are different between districts, it is recommended that intervention programmes to prevent teenage pregnancy be designed taking into consideration the area specific needs. The risk groups identified in this study should be targeted in implementing possible interventions. School authorities need to be aware of and have the skills necessary to handle with sensitivity, situations that arise due to love affairs among teenagers. Improvement of counseling services at school level and the need to enhance the capabilities of adolescent girls to cope with situations is recommended. Role of the Public Health Midwife in counseling teenagers regarding family planning has to be improved specially in the rural sector, where completing school education often leads to either a job or marriage.

1. Introduction

Teenage pregnancies are known to be associated with adverse outcomes during pregnancy and childbirth. The negative obstetric and foetal outcomes as well as social consequences associated with teenage pregnancies are well documented globally. Preventing teenage pregnancy is important in achieving the millennium development goals of maternal and child survival. In Sri Lanka, teenage pregnancies are recognized as a major health concern needing the provision of special care during pregnancy and childbirth.

A pregnancy occurring in a young woman who has not reached her 20th birthday when the pregnancy ends is considered as a teenage pregnancy. This definition is applicable irrespective of the legal status of the marriage of the women or being legally considered as an adult. According to the Family Health Bureau of the Ministry of Health, 7.7 percent of the total pregnancies registered during 2007 were teenage pregnancies. The Demographic and Health Survey 2006/07 revealed that 6.4 percent of women aged 15 through 19 years had begun childbearing.

In view of the range of related negative medical and social outcomes, it is pertinent to launch interventions to avoid teenage pregnancies. Description of trends and district differentials will provide a more detailed picture of the magnitude of the problem in the country. Planning targeted interventions need an insight into social, behavioral and other factors that influence a woman to become pregnant as a teenager. Identifying the pathways that influence the occurrence of teenage pregnancies is the basis on which effective preventive programmes could be developed.

Thus, the objectives of this study were to describe the prevalence, trends and district differentials in teenage pregnancies using available data and to describe the underlying social, behavioral and other factors that influence/lead to teenage marriage and pregnancy so as to identify factors which may be amenable to intervention.

2. Methods

The study included:

- an analysis of available data to describe the prevalence, trends and district differentials in teenage pregnancies ,
- a community based cross sectional comparative study to determine risk factors of teenage pregnancies and
- a qualitative inquiry to explore the circumstances and underlying social, behavioral and other factors of teenage pregnancies.

2.1 Analysis of available data

The two main sources of available data on teenage pregnancies and marriages are, vital event registration data from the Registrar General's Department and the data collected routinely by the Family Health Bureau (FHB), Ministry of Health through the Reproductive Health Information System (RHMIS). From the above sources, data available for the past 5-10 years were used to study the prevalence, trends and district differentials in teenage pregnancies. In addition, data from the Demographic and Health Survey (DHS) 2006/07 were obtained and further analysis, was attempted.

2.2 Community based comparative study

A cross-sectional comparative study among pregnant teenagers and a sample of teenage non-pregnant females was carried out to describe the underlying factors that influence/lead to teenage marriage and pregnancy.

2.2.1 Study setting

From the available data and following discussions with the relevant health authorities, three districts were purposively selected for the study, namely, Anuradhapura, Batticaloa and Colombo. Consideration was given to include groups from different socio-economic strata as well as ethnic backgrounds.

Within each district, three MOH areas with high rates of teenage pregnancies were purposively selected to be included in the study based on the information available at the FHB and the discussions held with the health authorities in the districts.

Further, preliminary field visits were made to the selected MOH areas to identify 'pockets' where the reported number of teenage pregnancies was high. In the Batticaloa district an additional MOH area was included to capture the ethnic variation in the sample. All Public Health Midwife areas in the selected MOH areas were included in the study.

2.2.2 Study populations

Pregnant teenagers living in three MOH areas each from Colombo and Anuradhapura districts, and four MOH areas from Batticaloa district were considered as the study population while

non-pregnant teenagers from the same study areas comprised the comparison population. For purposes of this study, a pregnant teenager was defined as a female who has commenced her pregnancy before reaching her 20th birthday.

All pregnant teenagers resident in the MOH area, who have not completed their 20th year at the time she became pregnant and who were registered by the Public Health Midwife within a period of 3 months from the date of commencement of the study were included. A group of non-pregnant females of the same age category as the 'study group' and resident in the same MOH area were included as the 'comparison group'.

Any teenage female who has not been living in the selected MOH area for a period of 6 months prior to the study was excluded from both study and comparison groups.

2.2.3 Sample size

It was decided to enroll all eligible participants during a 3 month period of data collection. The anticipated sample size was 500 individuals each in the study group and comparison group.

2.2.4 Data collection

All participants were contacted through the public health midwives in the selected areas. A structured pre-tested interviewer administered questionnaire was used to collect data from the respondents. Sinahala version of the questionnaire was used in Colombo and Anuradhapura districts while a Tamil translation was used in Batticaloa district. Field investigators were trained in data collection procedures and were supervised to ensure quality of data.

Parental consent was obtained from those who were living with parents. If they were not living with their parents, consent was obtained from the respondent herself. All measures were taken to ensure privacy of participants and confidentiality of the information obtained. Data were collected during the period of May to August 2010.

2.2.5 Data analysis

Data were analysed using SPSS software package. Comparisons between pregnant teenagers and non-pregnant teenagers using frequency distributions were carried out. Risk factors associated with teenage pregnancy, were identified through univariate and multivariate analyses.

2.3 Qualitative inquiry

A qualitative inquiry was carried out to obtain in-depth information on underlying social and behavioural factors that influence or lead to teenage marriage and pregnancy. The two methods used in the study were:

- **Focus group discussions** were carried out with community leaders, teachers in selected schools and health personnel and mothers of pregnant teenagers. The focus of these interviews was to obtain information on norms in society on teenage pregnancy, specific vulnerabilities, circumstances leading to teenage pregnancies and awareness of services.

- **In-depth interviews** were carried out with selected pregnant teenagers and their partners, and teenage non-pregnant females. These were focused mainly on life histories to elicit socio-economic circumstances, cultural influence on risk perception and individual vulnerabilities leading to pregnancy.

An investigator with, special training and experience in conducting qualitative research was responsible for the conduct and analysis of the focus group discussions and in-depth interviews. Four field investigators, one of them fluent in Tamil language, assisted in carrying out FGDs and in-depth interviews.

Participants for the focus groups and in-depth interview were selected using purposive sampling technique based on experience pooling. The number of focus groups and in-depth interviews were decided on in relation to attainment of a theoretical saturation point as intended by the objectives of the study. Qualitative inquiries were conducted during the period of May to August 2010.

Thematic analysis was done on qualitative data to identify the behavioural and societal factors that contributed towards teenage pregnancies. An inductive analysis grounded in the data was used. Analysis was an iterative process of coding, re coding, displaying, reducing and summarising according to themes.

2.4 Ethical considerations

All participants were verbally informed regarding details of the study and assured that all information provided will be considered as ‘strictly confidential’. Informed verbal consent was obtained prior to enrolling for the study. Participants were informed of the purpose of the study, content and the mechanism of data collection. No personal identification data were collected.

Ethical clearance was obtained from the Ethics Review Committee of the Faculty of Medicine, University of Colombo.

3. Prevalence, trends and district differentials in teenage pregnancies based on secondary data

Data from the Registrar General's Department, DHS 2006/07 and the RHMIS of the Family Health Bureau of the Ministry of Health were summarised and further analysed. The findings are presented in this Chapter.

3.1 Data from Registrar General's Department

Routinely available data from the Registrar General's (RG) Department are based on the registrations of live births throughout the island, hence could be considered as a proxy for information on pregnancies. Data on the number of live births to females who were less than 15 years and those in the age group 15-19 years were available by district, sector, ethnic group and legitimacy of the birth, for the years 2000, 2001, 2002, 2003 and 2006. It was not possible to obtain individual level data for further analysis.

Table 1 presents data on live births to females aged 19 or lower as a percentage of total births for the years by sector of residence. A consistent declining trend in the percentage of live births to females aged less than 19 years was observed from the year 2000 to 2006 (81% in 2000 to 5.4% in 2006). For the years 2000 to 2003, there were no births registered to females in the group aged less than 15 years and in 2006, 0.03% of all births had been to females in this age group. the group aged less than 15 years and in 2006, 0.03% of all births had been to females in this age group. This percentage was 0.03% in the urban sector which was marginally lower than rural (0.04%) and estate (0.06%) sectors. Comparison of the percentages of live births to all females less than 19 years of age by sector shows that the rural sector has the highest percentages and the estate sector has the lowest. A declining trend is seen within each sector from 2000 to 2006.

Table 1: Live births to females aged less than 19 years as a percentage of all births by sector

Year	Urban		Rural		Estate		Total	
	<15 years	15-19 years	<15 years	15-19 years	<15 years	15-19 years	<15 years	15-19 years
2000	0	7.5	0	10.2	0	5.1	0	8.1
2001	0	7.1	0	9.6	0	4.4	0	7.7
2002	0	6.4	0	8.8	0	4.5	0	7.2
2003	0	6.1	0	8.3	0	4.3	0	6.9
2006	0.03	4.9	0.04	6.4	0.06	4.6	0.03	5.4

As shown in Table 2, the highest percentage of live births to females 19 years and under was seen among the Sri Lankan Tamils and the lowest among the group 'other'. Other ethnic groups included Burghers, Malays, Sri Lanka Chetties and foreign nationals.

This pattern was consistent for each of the years for which data on ethnic group was available. A declining trend in the percentages was evident among all ethnic groups with the exception of Sri Lankan Moors who did not show a clear trend.

Table 2: Live births to females less than 19 years as a percentage of all births, by ethnicity

Year	Sinhalese	Sri Lankan Tamil	Moor	Indian Tamil	Other
2000	8.0	9.5	7.2	8.7	7.6
2001	7.5	9.2	6.8	8.9	5.4
2002	7.1	9.1	6.1	7.8	5.3
2003	6.8	8.4	7.4	5.7	5.1
2006	5.1	7.4	5.8	5.2	4.3

Legitimacy of the birth was also recorded by the Registrar General's department. For each of the years, the highest percentage of illegitimate births in this age group was seen in the estate sector with the urban sector recording the lowest. It must be noted that during the year 2006, the percentages of illegitimate births in all sectors have shown an increase compared to the percentages in 2003 (Table 3).

Table 3: Live births registered as 'illegitimate' to females less than 19 years as a percentage of all births by sector

Sector	2000	2001	2002	2003	2006
All sectors	2.9	3	1.6	1.9	2.5
Urban	2.2	1.1	1.0	1.0	2.3
Rural	4.3	2.4	1.9	2.5	2.7
Estate	8.4	5.9	6.7	4.3	13.3

There were marked inter district differentials in the percentage of live births to females in this age group. Of the 25 districts in Sri Lanka, 10 districts had consistently high percentage of births to females aged less than 19 years compared to the national average, throughout the years that were studied. These districts were: Kalutara, Hambantota, Batticaloa, Ampara, Trincomalee, Puttalam, Anuradhapura, Polonnaruwa, Moneragala and Ratnapura. In six districts (Colombo, Gampaha, Nuwara Eliya, Matara, Jaffna and Kegalle) the percentages were consistently low. Other nine districts showed a varied pattern (Table 4). In general, within each district, there was a declining trend over the years.

Table 4: Live births to females less than 19 years as a percentage of all births by district

District	2000	2001	2002	2003	2006
Western Province					
Colombo	5.2	4.7	4.4	4.1	3.4
Gampaha	8.3	7.9	7.0	6.6	4.4
Kalutara	9.0	8.2	8.0	7.9	5.7
Central Province					
Kandy	5.7	5.0	4.9	4.7	3.7
Matale	7.8	7.1	7.6	7.1	5.1
Nuwara Eliya	6.6	6.2	6.0	5.8	4.7
Southern Province					
Galle	8.3	7.9	7.4	7.4	5.3
Matara	6.1	5.8	6.2	5.5	4.8
Hambantota	9.4	8.4	7.6	7.4	6.7

Northern Province					
Jaffna	5.9	6.2	5.5	5.4	4.2
Kilinochchi	8.3	7.3	6.6	8.3	5.8
Mannar	6.7	7.5	7.8	6.7	7.5
Vavuniya	7.7	7.2	6.5	7.6	6.0
Mullativu	9.6	7.9	7.2	8.5	7.4
Eastern Province					
Batticaloa	12.2	11.5	11.9	10.3	10.2
Ampara	8.9	9.0	7.9	7.6	7.1
Trincomalee	12.6	12.0	11.6	10.7	8.3
North Western Province					
Kurunegala	8.8	8.2	6.9	6.5	5.0
Puttalam	14.5	13.4	13.0	13.2	9.0
North Central Province					
Anuradhapura	11.3	11.0	9.7	8.6	6.7
Polonnaruwa	10.9	10.2	9.7	9.3	6.8
Uva Province					
Badulla	7.7	8.2	7.7	7.3	5.7
Monaragala	9.8	10.2	10.1	9.7	8.4
Sabaragamuwa Province					
Ratnapura	10.5	10.2	9.6	9.3	6.5
Kegalle	6.2	5.8	5.5	5.1	4.2
Sri Lanka	**8.2**	**7.7**	**7.3**	**6.9**	**5.4**

3.2 Data from the routine reproductive health management information system of the Family Health Bureau, Ministry of Health

Family Health Bureau of the Ministry of Health collects information on teenage pregnancies on a routine basis through the RHMIS. However, due to the alterations in the definitions used in reporting registered mothers /new-borns over the past years, there were limitations in using such data in the study of trends. For the years 2007, 2008 and 2009, the number of teenage pregnant mothers registered by the Public Health Midwife was available according to MOH area and district.

Table 5 presents pregnant teenagers registered by Public Health Midwives as a percentage of all pregnant mothers registered during 2007, 2008 and 2009. For the year 2007, the percentage of pregnant teenagers varied widely from a lowest value of 5.8% in Kegalle district to the highest value of 14.4% in Mullaitivu district. In comparison with the national average of 7.7%, 11 districts and the Colombo Municipal Council area reported higher values. The areas that showed consistently higher values than the national average, for all three years for which data were available were: Kilinochchi, Vavuniya, Mullaitivu, Batticaloa, Ampara, Tricomalee, Puttalam, Anuradhapura, Polonnaruwa, Moneragala and Ratnapura.

Though data were limited to three years, the trends in the percentage of teenage pregnancies were studied. The national level data and most of the districts also showed a declining trend. Exception were Vavuniya, Ampara Trincomalee, Anuradhapura and Polonnaruwa. No data were available for the districts of Kilinochchi and Mullaitivu for the years 2009.

Table 5: Teenage females registered by public health midwives as a percentage of all registered pregnant mothers by district by year

District	2007	2008	2009
Western Province			
Colombo	6.3	5.0	4.2
CMC*	10.8	8.0	7.1
Gampaha	6.0	4.6	4.2
Kalutara	7.5	5.3	5.5
Central Province			
Kandy	5.9	5.4	5.4
Matale	7.2	6.2	3.0
Nuwara Eliya	6.5	6.5	5.8
Southern Province			
Galle	7.3	6.2	5.2
Matara	6.2	5.5	5.2
Hambantota	6.4	6.5	6.2
Northern Province			
Jaffna	6.8	5.6	4.4
Kilinochci	11.7	8.9	N/A
Mannar	6.9	6.6	6.2
Vavuniya	8.7	7.9	10.8
Mullaitivu	14.4	13.6	N/A
Eastern Province			
Batticaloa	16.1	12.9	12.7
Ampara	10.4	8.9	9.1
Trincomalee	10.3	12.2	12.9
North Western Province			
Kurunegala	6.5	5.7	5.8
Puttalam	12.1	9.5	9.5
North Central Province			
Anuradhapura	8.6	8.0	8.2
Polonnaruwa	8.6	8.1	8.5
Uva Province			
Badulla	7.4	7.5	7.3
Moneragala	8.4	8.1	7.3
Sabaragamuwa Province			
Ratnapura	8.1	7.8	7.7
Kegalle	5.8	5.2	5.0
Sri Lanka	**7.7**	**6.7**	**6.5**

* Colombo Municipal Council area

3.3. Data from the Demographic and Health Survey, 2006/07

Sri Lanka Demographic and Health survey 2006/07 has been carried out in 20 districts in the country excluding those in the Northern Province. A total of 21,357 households were selected of which 20,317 had been occupied at the time of the survey. A total of 15,068 ever married women aged between 15-49 years had been identified among whom 14,962 were successfully

interviewed (98% response rate). The age specific fertility rate (ASFR) for the age group 15-19 years was 28 per 1000 married women. The inter sectoral comparisons showed that the estate sector had the highest value (37) and that the lowest was in the urban sector (24). Comparison of ASFR from the previous DHS surveys showed that there is a gradual decline in the values from 1987 to 2000 (ASFR 15-19 years: 38 in 1987, 35 in 1993, 27 in 2000). ASFR of 28 in DHS 2006/07 indicates a marginal increase.

DHS 2006/07 provided an analysis of basic characteristics of women aged 15-49 years who have had a live birth or who are pregnant with their first child at the time of the survey. This analysis showed that 4.3% of females 15 to 19 years of age have had a live birth with another 2.1% being pregnant with the first child. Among the teenage females the percentage who had started childbearing showed an increase with increasing age (<1% in the 15 and 16 years of age to nearly 18% in the 19 year olds). Sector differentials are seen with the estate sector having the highest percentage of teenage females who have had a live birth or were pregnant with the first child. Inter district comparisons showed high values in the districts of Ampara and Trincomalee and low values in Galle, Kandy, and Gampaha districts. Among teenagers with only a primary level education, a high percentage had begun childbearing. There was no consistent pattern in relation to the wealth quintiles.

3.4 Further analysis of DHS data

Data for women aged 15-19 years, available in DHS 2006/07 were analysed. The overall teenage pregnancy rate was 6.3% (95% CI 5.4-7.2). Rates of teenage pregnancy showed a marked increase with increasing age from age 15 to 19 years (Table 6).

Table 6: Teenage pregnancy rates according to age

Age of women (years)	Teenage pregnancy %	95% CI
15	0.4	0.2–1.2
16	1.7	1.0–2.7
17	4.4	2.9–6.7
18	9.7	7.6–12.2
19	17.5	14.7–20.8
15-19	**6.3**	**5.4–7.2**

Table 7 shows the distribution of teenage pregnancies by sector, district and province. It is seen that the teenage pregnancy rates according to the sector of residence varied from a value of 6.8% in urban sector (95% CI 4.8-9.6), 6.3% (95% CI 5.3-7.3) in rural sector to 7.2 % (95% CI 4.6-10.9) in the estate sector. The association between rate of teenage pregnancy and sector of residence did not show any statistically significant relationship (p=0.79).

Inter-district comparisons indicated a statistically significant relationship between the rate of teenage pregnancy and district of residence (p=0.03). Trincomalee had the highest percentage of 13.8%. Monaragala (11.4%) Puttalam (11.1%) and Batticaloa (10.6%) also had high rates while Kegalle (1.2%) had the lowest rate.

Regarding the province where the respondent was living, Eastern province had the highest teenage pregnancy rate of 10.2% and Central province the lowest rate of 4.1% among the eight provinces included in the study (Data for the Northern Province was not available). The differences in the rates of teenage pregnancy between provinces were statistically significantly (p=0.001).

Table 7: Teenage pregnancy rates by resident sector, district and province

Residence	Rate of teenage pregnancy %	95% CI	p value
Sector			
Urban	6.8	4.8–9.6	
Rural	6.3	5.3–7.3	
Estate	7.2	4.6–10.9	p=0.7859
Province			
Western	5.6	4.2–7.3	
Central	4.1	3.2–5.3	
Southern	5.6	4.0–7.7	
Eastern	10.2	7.0–14.8	
North Western	8.8	6.0–12.8	
NorthnCentral	6.6	3.9–11.2	
Uva	7.0	4.8–10.0	
Sabaragamuwa	5.4	2.7–10.3	p=0.0260
District			
Ampara	7.1	3.3–14.8	
Anuradhapura	6.5	3.3–12.6	
Badulla	4.3	2.5–7.2	
Batticaloa	10.6	7.0–15.8	
Colombo	5.8	3.9–8.7	
Galle	4.3	2.6–7.0	
Gampaha	4.4	2.3–8.4	
Hambantota	4.8	2.5–8.7	
Kalutara	7.0	4.6–10.4	
Kandy	3.9	2.8–5.4	
Kegalle	1.2	0.2–6.1	p=0.0010
Kurunegala	7.0	3.7–13.0	
Matale	2.8	1.1–7.3	
Matara	7.5	4.4–12.5	
Monaragala	11.4	7.1–17.7	
Nuwara Eliya	5.2	3.6–7.6	
Polonnaruwa	6.7	2.9–14.9	
Puttalam	11.1	8.1–15.1	
Ratnapura	8.8	4.8–15.6	
Trincomalee	13.8	8.0–22.8	

Educational level was considered in three categories and the rate of teenage pregnancy was highest among the women who had not had a school education or had only a primary education (16.9%) and lowest among those who had an education up to GCE Advanced Level or above (2.3%) (Table 8). This analysis showed a statistically significant association between education levels of the women and rate of teenage pregnancies with the percentage showing a decline with increasing levels of education. ($p<0.001$).

There was a consistently declining trend in the teenage pregnancy rate with increasing wealth quintiles as shown in Table 8, ranging from a teenage pregnancy rate of 10.6% among the women belonging to the lowest wealth quintile to 2.8% among those in the highest wealth quintile. This relationship between the wealth quintile and teenage pregnancy rates was statistically significant ($p<0.001$).

Table 8: Teenage pregnancy rates by education level and wealth quintiles

Characteristic	Rate of teenage pregnancy %	95% CI	p value
Women's education level			
No schooling/primary	16.9	10.3–26.5	
Secondary	7.9	6.8–9.1	
Advanced level above	2.3	1.7–3.3	p=0.0000
Wealth quintile			
Lowest	10.6	8.4–13.4	
Second	7.0	5.3–9.1	
Middle	6.4	4.8–8.6	
Fourth	5.0	3.5–7.1	
Highest	2.8	1.8–4.5	p=0.0000

3.5 Limitations in the analysis of DHS data

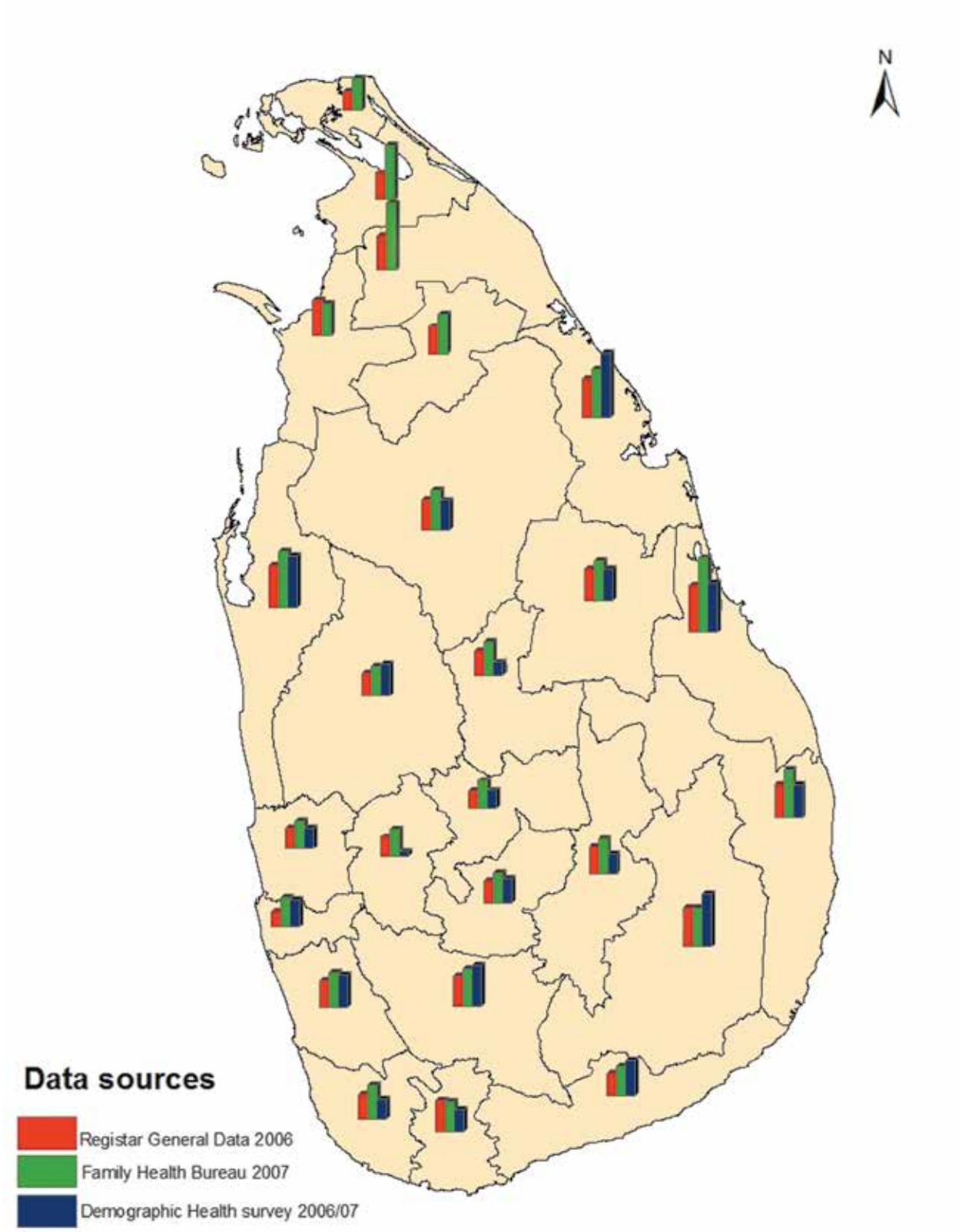
Using secondary data from DHS 2006/07, further analysis was contemplated to identify the association between the teenage pregnancies and other relevant variables especially those related to knowledge and practices on reproductive health. Data collected through DHS, from all married and unmarried women in the reproductive age group (15-49 years) were included in this analysis to estimate the teenage pregnancy rate and associated socio demographic characteristics. It was observed that information on contraceptive knowledge and practices has been collected only from married women and was not available for unmarried women, thus basing the findings on different denominators. Therefore, it was not possible to cross tabulate teenage pregnancy rates against variables related to contraceptive knowledge and practices.

Even though there are many limitations in making comparisons between the data from the three different sources, an attempt has been made to do so.

3.6 Comparisons of teenage pregnancy rates by district from secondary data sources

Figure 1 shows a comparison of teenage pregnancy rates by district available from the three different sources of secondary data. Even though the data sources were different and are not strictly comparable, for each district there was some degree of consistency seen in the teenage pregnancy rates from the three sources. The highest rates were seen in the districts in the Eastern province from all sources.

Figure 1: Teenage pregnancy rates in Sri Lanka by district, 2006-2007



DHS 2006/07 did not include the districts in the Northern Province; hence the data for these districts are limited to two sources only.

4. Characteristics of pregnant teenagers

4.1 Socio-demographic characteristics of the pregnant teenagers

A total of 510 teenagers, who were pregnant at the time of the study and had conceived before reaching 20 years of age were included. Of them, 41% were from the Colombo district while 34% and 24 % were from Batticaloa and Anuradhapura districts respectively. Basic characteristics of the study group are presented in Table 9.

Age of respondents in completed years at the time of the survey showed that, 3% were aged 15 years or less while 47% were in the age group 16 to 18 years. The highest proportion was seen among 19 year olds (39%) with another 11% having reached 20 years. A majority (80%) had attained menarche between the ages of 10-14 years.

The majority were Sinhalese (53%) with the proportion of Tamils and Muslims being 30% and 17% respectively. Religious affiliations were: 48% Buddhists, 27% Hindus, 17% Muslims and 8% Christians.

Table 9: Socio demographic characteristics

Characteristic	Number (n=510)	Percentage
District of residence		
Colombo	211	41.4
Batticaloa	175	34.3
Anuradhapura	124	24.3
Age in completed years at the time of survey		
<=14	5	1.0
15	10	2.0
16	35	6.8
17	100	19.6
18	105	20.6
19	199	39.0
20	56	11.0
Ethnicity		
Sinhala	269	52.7
Tamil	153	30.0
Muslim	88	17.3
Religion		
Buddhist	243	47.6
Hindu	140	27.5
Christian	39	7.6
Islam	88	17.3
Age at menarche		
<10	39	7.6
10-14	409	80.1
>14	63	12.3

Information related to educational status and occupations of the pregnant teenagers are presented in Table 10. Of the group, 1% have had no schooling with another 9.6% educated only up to

primary level (grades 1 to 5). The highest proportion of the pregnant teenagers had achieved an educational level of grades 6 to 11 (80%). Only 10% had completed the General Certificate of Education Ordinary Level or had achieved a higher level.

Only 2 (0.4%) of the study group reported that they left school due to the pregnancy while 18% said that they did so, to get married. Many of them had left school, due to reasons related to education (following completion of General Certificate of Education Advanced Level 1%, failing General Certificate of Education Ordinary Level 24% and not interested in studies 3%).

Of the group, 14% reported that they have received a vocational training. Approximately one fourth (26%) had been engaged in paid work during the previous year while only 12 (9%) were engaged in paid work at the time of survey.

Table 10: Educational status and occupation

Characteristic	Number (n=510)	Percentage
Highest educational level		
No schooling	5	1.0
Grade 1-5	49	9.6
Grade 6-11	407	79.8
O/L and above	49	9.6
School leaving age among those who have attended school		
<10	7	1.4
10-12	28	5.6
13	31	6.1
14	40	7.9
15	75	14.9
16	187	37.0
17	55	10.9
18	27	5.4
19	15	3.0
No response	40	7.9
Received a vocational training		
Yes	70	13.7
No	440	86.3
Engaged in paid work during last one year		
Yes	133	26.1
No	377	73.9
Still engaged in paid work (n=133)		
Yes	12	9.0
No	121	91.0
Reason for the participant to leave the job (among those who had given up the job) (n=121)		
To get married	52	43.0
Due to pregnancy	29	24.0
Husband's objection	10	8.3
Others	19	15.7
No response	11	9.1

4.2 Basic socio-demographic characteristics of the spouse

The highest proportion of spouses belonged to the age group 20-24 years (54%) while 28% were in the 25-29 year age group. Of the group, 13% were very young, being in the age group less than 20 years. A majority of the spouses were Sinhala (54%) with the Tamils and Muslims comprising 30% and 17% respectively (Table 11).

Table 11: Socio demographic characteristics of the spouses

Characteristic	Number (n=510)	Percentage
Age in completed years at the time of survey		
<20	65	12.7
20-24	277	54.3
25-29	141	27.6
30-34	22	4.3
>35	3	0.6
No response	2	0.4
Ethnicity		
Sinhala	275	53.9
Tamil	151	29.6
Muslim	84	16.5
Religion		
Buddhist	257	50.4
Hindu	133	26.1
Christian	36	7.0
Islam	84	16.5

As shown in Table 12, the educational status of the spouse indicated that 72% of them had been educated up to grades 6 to 11 with 13% having being educated to a level higher than grade 6. Financial reasons (28%) and the 'need to do a job' (23%) were the common reasons for the spouses to leave school. Only 3% of the spouses had received any vocational training. At the time of the study, 99% of the group were engaged in paid work. Crafts and related work (24%) and elementary occupations (23%) were the commonest reported.

Table 12: Educational status and occupation of spouses

Characteristic	Number (n=510)	Percentage
Highest educational level achieved		
Not gone to school	4	0.8
Grade 1-5	74	14.5
Grade 6-11	367	71.9
O/L – A/L	53	10.4
More than A/L	5	1.0
No response	7	1.4
Reasons for leaving school (n=506)		
Financial reasons	140	27.7
To do a job	116	22.9
After completing A/L	11	2.2

Other educational reasons	59	11.7
To get married	11	2.2
Others	36	7.1
No response	133	26.3
Received a vocational training		
Yes	17	3.3
No	458	89.8
No response	35	6.9
Engaged in a paid work during last one year		
Yes	507	99.4
No	1	0.2
No response	2	0.4
Occupation among those employed during last one year (n=507)		
Armed forces	50	9.9
Service and sales workers	73	14.4
Agriculture forestry, fishing	54	10.6
Crafts and related work	120	23.6
Elementary occupations	116	22.8
Technical and associated professionals	12	2.4
Plant and mechanical operators	59	11.7
Others	11	2.2
No information	12	2.4

Based on the reporting of the pregnant teenagers, 40% of spouses were using alcohol and 9% were using drugs.

4.3 Details related to marital/cohabiting status

Marital/cohabiting status of the teenage pregnant females was inquired into. The minimum age for legal marriage in Sri Lanka is 18 years. However, eighty two per cent of the sample reported that they were 'legally' married. Hence, the validity of this information is questionable. The proportion unmarried and co-habiting was 17%. Almost all (99%) married females claimed that they possess a 'marriage certificate'. Eleven per cent of the women were less than 16 years old when they got married or started cohabiting. The spouses were older at the time with only 22% being under 19 years of age. Of the group, 77% got married/ started cohabiting following a love affair. For nearly one third of the sample (31%) marriage/cohabiting was a sudden decision (Table 13).

Table 13: Details related to marital/cohabiting status

Details	Number (n=510)	Percentage
Marital status		
'Legally' married	423	82.9
Not 'legally' married	87	17.1
Having a 'marriage certificate' among those who are legally married (n=423)		
Yes	419	99.1
No	4	0.9
Current living status		
Married and living together	418	82.0

Details	Number (n=510)	Percentage
Married but living separately	4	0.8
Unmarried but cohabiting	84	16.5
Not response	4	0.8
Age at the beginning of marriage/cohabitation		
<= 14	18	3.5
15	39	7.6
16	97	19.0
17	107	21.0
18	159	31.2
19	79	15.5
20	8	1.6
No response	3	0.6
Age of the spouse at the beginning of marriage/cohabitation		
<19	115	22.5
20-24	263	51.6
25-29	116	22.7
30-34	11	2.2
>35	2	0.4
No response	3	0.6
Whether marriage/co-habiting was following a love affair or proposal		
Love affair with parents' consent	235	46.1
Love affair without parents' consent	155	30.4
Proposal by parents with my consent	110	21.6
Proposal by parents without my consent	1	0.2
Other	8	1.6
No response	1	0.2
Whether the marriage/co-habiting was planned or sudden decision		
Planned with parents	287	56.3
Planned without parents	64	12.5
Sudden decision	158	31.0
No response	1	0.2
Issues that influenced the decision to marry/cohabit		
Both partners wanted to get married	416	81.6
Parental insistence	36	7.0
As a solution to financial problems	19	3.7
Due to pregnancy	3	0.6
Other	34	6.6
No response	2	0.4

4.4 Economic independence

Economic independence of the pregnant teenagers was assessed based on a series of responses about availability of money of her own, freedom to spend money etc. Only 8% of the females had their own income while 79% spouses/partners had a regular income. Of the females 76% handled the money alone or shared handling of money with the spouse (Table 14).

Table 14: Information on economic stability/independence

Economic stability/independence	Number (n=510)	Percentage
Having own money		
Yes	38	7.5
No	472	92.5
Source of income among those who have an own income (n=38)		
Salary	10	26.3
Business	6	15.8
Savings	2	5.3
Parents/Siblings	11	29.0
Other	8	21.0
No response	1	2.6
Freedom to spend money as they wish among those who are having their own income (n=38)		
Yes	35	92.1
No	2	5.3
No response	1	2.6
Regular income of spouse		
Yes	405	79.4
No	104	20.4
No response	1	0.2
Source of the regular income		
Salary	232	45.5
Business	67	13.1
Other	107	21.0
No regular income	104	20.4
Monthly income		
No regular monthly income	51	10.0
<9999	93	18.2
10000–19999	185	36.3
20000–29999	116	22.7
>30000	65	12.7
Money handling between the female and spouse among those who are married/cohabit		
Everything by spouse	7	1.4
Spouse handles: gives me on request	90	17.6
I handle money	325	63.7
Both share	66	12.9
No response	22	4.3

4.5 Living arrangements

Table 15 presents the living arrangements of the study group at the time of the survey. It was reported that 62% of the couples lived with their own parents or the parents of the spouse and 29% of the couples lived on their own. There has been a change in the living arrangements during the past two years among 42%. The common reasons for changing the living arrangements were to live with the spouse (21%) or with the spouse and in-laws (28%).

Table 15: Living arrangements of the pregnant teenagers, at the time of the interview

Living arrangements	Number (n=510)	Percentage
Current living arrangement		
Spouse only	146	28.6
Spouse and in-law/s	163	32.0
Spouse and parent/s	153	30.0
Parent/s only	25	4.9
In-laws only	1	0.2
Other	21	4.1
No response	1	0.2
Living arrangement was same for last 2 years		
Yes	216	42.4
No	294	57.6
Living arrangement not changed	216	42.4
Moved to live with in-laws and spouse	144	28.2
Moved so that spouse and I live on our own	106	20.8
Moved to a relative's house	2	0.4
Other	34	6.7
No response	8	1.6

4.6 Information related to immediate family members

Selected information on the parents of the pregnant teenagers is presented in Table 16. The proportion whose mothers were not alive was 3% with a much higher percentage reporting that the fathers were not alive (11%). Distribution of mothers of the teenagers by age showed that 14% of them were less than 35 years of age, the comparable proportion among fathers being 3%. The majority of the parents were Sinhala and were Buddhists. The proportion of mothers who had not attended school (18%) was higher than that of fathers (14%). One third of mothers (33%) had worked abroad.

Table 16: Basic information relevant to the parents

Characteristic	Mother (n=510)	Percentage	Father (n=510)	Percentage
Current age				
=<35	73	14.3	13	2.7
36-40	165	32.4	70	13.7
41-45	124	24.3	126	24.7
>46	123	24.1	229	44.9
Not alive	15	2.9	57	11.2
No response	10	2.0	14	2.7
Ethnicity				
Sinhala	265	52.0	263	51.6
Tamil	154	30.2	152	29.8
Muslim	88	17.3	87	17.1
Other	1	0.2	0	0.0
No response	2	0.4	8	1.6

Religion				
Buddhist	244	47.8	247	48.4
Hindu	142	27.8	140	27.5
Christian	34	6.7	27	5.3
Islam	88	17.3	87	17.1
No response	2	0.4	9	1.8
Education level				
Not attended to school	90	17.6	71	13.9
Grade 1–5	170	33.3	175	34.3
Grade 6–11	200	39.2	182	35.7
Ordinary level/advanced level	24	4.7	32	6.3
More than advanced level	2	0.4	3	0.6
No response	24	4.7	47	9.2
Ever worked abroad				
Yes	169	33.1	41	8.0
No	338	66.3	467	91.6
Don't know	1	0.2	0	0.0
No response	2	0.4	2	0.4
Duration of employment overseas (in years)	**n = 169**		**n=41**	
<5	113	66.9	23	56.1
6–10	18	10.7	7	17.0
11–15	8	4.7	2	4.9
16–20	3	1.8	4	9.8
No response	30	17.8	7	17.0
Pregnant teenager's age in years at the time the parent left				
<5	46	27.2	8	19.5
6–10	48	28.4	11	26.8
11–15	32	18.9	9	22.0
16–20	15	8.9	5	12.2
No response	31	18.3	10	24.4

On inquiry it was found that of the pregnant teenagers 11% had experienced parental separation and 3% parental divorce. Of the teenagers 20% reported that sometime in life they were brought up by relatives (Table 17).

Table 17: Distressful experiences during childhood

Experience	Number (n= 510)	Percentage
Parental separation	57	11.4
Parental divorce	16	3.2
Parental re-marriage	42	8.2
Was brought up by relatives sometime in life	101	19.8
Was living in an orphanage sometime in life	8	1.6
Was working as a domestic aid sometime in life	4	0.8

4.7 Information related to sexual experiences

On inquiring about sexual experiences 4% reported having their first sexual intercourse between the ages of 10-14 years. A majority (77%) reported that the first intercourse was after marriage. Only 2% reported ever being sexually abused (Table 18).

Table 18: Sexual experiences

Information on sexual experiences	Number (n= 510)	Percentage
Age at first intercourse in years		
10-14	22	4.3
15-19	477	93.5
No response	11	2.2
Circumstances of first sexual intercourse		
Prior to marriage with a lover with consent	108	21.3
Prior to marriage with a lover without teenager's consent	4	0.8
After marriage	394	77.2
No response	4	0.8
Ever sexually abused		
Yes	8	1.6
No	496	97.2
No response	6	1.2

4.8 Information related to pregnancy

Of the pregnant teenagers 41(8%) indicated that this was their second pregnancy. None reported more than one previous pregnancy (Table 19).

Table 19: Details of previous pregnancies

Characteristics	Number (n= 41)	Percentage
Age at first pregnancy		
5	4	9.8
6	12	29.3
17	14	34.1
18	5	12.2
19	3	7.3
No response	3	7.3
Pregnancy outcome		
Live births	18	43.9
Still births	3	7.3
Abortions	19	46.3
No response	1	2.4
Age of previous child in completed years		
1	7	17.1
2	15	36.6
3	14	34.2

4	1	2.4
5	2	4.9
No response	2	4.9

In 17% of the respondents, the period of amenorrhoea at the time of the survey was less than 12 weeks, 42% were between 12-23 weeks and 39% reported a period of amenorrhoea of 24 weeks or more. Three hundred and four pregnant teenagers (60%) mentioned that the current pregnancy was 'planned' and the commonest reason was 'husband's wish to have a baby' (80%). Almost half of the respondents (49 %) stated that 'motherhood is the most important achievement in life' (Table 20).

Table 20: Reasons to become pregnant among pregnant teenagers who had planned the pregnancy

Reasons	Number	Percentage (out of 304)
Felt that motherhood is the most important achievement in life	148	49.0
Having a baby would strengthen the bond with my spouse	91	29.8
Having a baby would improve my status in the family	52	17.2
Husband's wish to have a baby	243	79.8
To prove my fertility	39	12.9
Influence of in-laws to have a baby early	55	18.2
My mother and/or sisters also had babies in this age	12	4.0
My friends and neighbours have also had babies at this age	13	4.3
Advice by a doctor to get pregnant early	4	1.3
It is expected from the society for a married couple to have a baby	60	19.9
In our culture/religion it is expected to get pregnant early	16	5.3
I believe that a married woman should have babies early	36	11.9
Other	39	12.9

*the responses are not mutually exclusive

The question whether they considered 'getting rid' of the current pregnancy at any time, was asked from those who reported that the pregnancy was 'unplanned' and 21 (4%) in this group admitted that they did so.

4.9 Information related to use of contraceptives

Those who reported that the current pregnancy was 'unplanned' (n=206, 40%) were inquired as to whether they used any method of contraception to prevent this pregnancy. Of this group, 31% said that they were on a contraceptive method and a majority of them had been on oral contraceptives (59%) (Table 21).

On inquiry, 2% of all pregnant teenagers reported that they have 'ever used emergency contraceptive pill'.

Table 21: Family planning practices among pregnant teenagers who reported unplanned pregnancies

Practices	Number (n=206)	Percentage
Used a contraceptive method		
Yes	64	31.1
No	142	68.9
The contraceptive method used (n=64)		
Calendar method	7	10.9
Coitus Interruptus	5	7.8
Oral contraceptive method	38	59.4
Depot medroxyprogesterone acetate (DMPA) injection	8	12.5
Norplant	1	1.6
Intra Uterine Contraceptive Device	2	3.1
Condoms	2	3.1
No response	1	1.6

The 142 pregnant teenagers who reported that their pregnancies were 'unplanned' and had not used a contraceptive method were asked about the most important reason for not using a contraceptive method. The commonest reason given was not being aware of contraceptive methods (37%) with another 27% indicating that there was opposition from the spouse (Table 22).

Table 22: Reasons for not using a contraceptive method among the pregnant teenagers who reported an unplanned pregnancy

Reasons	Number (n=142)	Percentage
Was not aware of contraceptive methods	53	37.3
Opposition of spouse for use of contraceptives	39	27.4
Afraid of side effects	17	12.0
Afraid of becoming infertile	11	7.7
Not aware of how to obtain contraceptive services	4	2.8
Did not realise the need as infrequent sexual relationships	4	2.8
Inconvenience of using contraceptives	4	2.8
Opposition of mothers for use of contraceptives	4	2.8
Did not use contraceptives due to religious concerns	2	1.4
Ashamed to talk about contraceptives with the spouse	2	1.4
Concerned that using contraceptives will cause a 'social stigma'	1	0.7
Was unable to afford to buy contraceptives	1	0.7
Not wiling to go to clinic thinking too young	1	0.7
Was not aware that young females also can use contraceptives	1	0.7
Total	**142**	**100.0**

4.10 Information related to use of field health services

Area Public Health Midwife was known to 98% of pregnant teenagers and 96% knew how to contact or meet her. A total of 199 (39%) had received services from the Public Health Midwife after marriage prior to the current pregnancy. Those belonging to this group were asked about

the types of services they received from the Public Health Midwife prior to pregnancy. Advice on planning a pregnancy (62%), providing a contraceptive method (60%) and information on adverse outcomes of teenage pregnancy (50%) were the most commonly provided services (Table 23).

Table 23: Types of services received by the pregnant teenagers from the Public Health Midwife prior to pregnancy

Services	Number	Percentage (out of=199)
Advices on healthy sexual relationship	88	44.2
Advices on planning a pregnancy	123	61.8
Information related to contraceptive methods	99	49.7
Supplied/provided a contraceptive method	120	60.3
Advices for mental preparation of pregnancy	53	26.6
Advices on adverse outcome of teenage pregnancy	100	50.3
Discussed with the husband and family members regarding pregnancy	40	20.1

4.11 Basic socio-demographic characteristics of pregnant teenagers by district

A higher proportion of pregnant teenagers <16 years were from Colombo (16%) compared to Batticaloa (6%) and Anuradhapura 4%). Almost all from Anuradhapura (97%) and a majority from Colombo (71%) were Sinhalese while a majority in Batticaloa were Tamils (76%). Proportions who have achieved an education level of GCE (OL) or above was lowest in Batticaloa (5%). Highest proportions of unmarried co-habiting pregnant teenagers were from Batticaloa district (34%) (Table 24).

Table 24: Basic characteristics of the pregnant teenagers by districts

Characteristic	Colombo		Batticaloa		Anuradhapura	
	Number (n=211)	%	Number (n=175)	%	Number (n=124)	%
Age in completed years at the time of survey						
<=14	5	2.4	0	0.0	0	0.0
15	7	3.3	2	1.1	1	0.8
16	22	10.4	9	5.1	4	3.2
17	38	18.0	47	6.9	15	12.1
18	43	20.4	37	21.1	25	20.2
19	82	38.9	62	35.4	55	44.4
20	14	6.6	18	10.3	24	19.4
Ethnicity						
Sinhala	149	70.6	0	0.0	120	96.8
Tamil	20	9.5	133	76.0	0	0.0
Muslim	41	19.4	42	24.0	4	3.2
Other	1	0.5	0	0.0	0	0.0
Religion						
Buddhist	124	58.8	0	0.0	119	96.0
Hindu	14	6.6	126	72.0	0	0.0
Christian	31	14.7	7	4.0	1	0.8
Islam	42	19.9	42	24.0	4	3.2

Highest educational level achieved						
No schooling	2	0.9	3	1.7	0	0.0
Grade 1-5	10	4.7	39	22.3	0	0.0
Grade 6-11	172	81.5	124	70.9	111	89.5
O/L and above	27	12.8	9	5.1	13	10.5
Current living status						
Married and living together	197	93.4	111	63.5	110	88.7
Married but living separately	0	0.0	2	1.1	2	1.6
Unmarried but cohabiting	14	6.7	60	34.3	10	8.1
Not response	0	0.0	2	1.1	2	1.6

4.12 Basic socio-demographic characteristics of spouses by district

Highest proportions of spouses aged less than 19 years was reported from Batticaloa (21%). Similar to pregnant females, almost all from Anuradhapura (97%) and a majority from Colombo (74%) were Sinhalese while a majority in Batticaloa were Tamils (76%). Highest proportion of spouses with an education level of General Certificate of Education Ordinary Level or more was reported from Colombo (16%). Most of the spouses in Colombo were engaged in craft and related trades (34%) while in Batticaloa and Anuradhapura, most were engaged in elementary occupations (40%) and 33% were in the armed forces (Table 25).

Table 25: Basic characteristics of the spouses by district

Characteristic	Colombo		Batticaloa		Anuradhapura	
	Number (n=211)	%	Number (n=175)	%	Number (n=124)	%
Age in completed years at the time of survey						
<19	22	10.4	37	21.4	6	4.8
20-24	116	55.0	95	54.8	66	53.3
25-29	58	27.4	38	33.9	45	36.3
30-34	13	6.1	3	1.8	6	4.8
>35	2	1.0	0	0.0	1	0.8
Ethnicity						
Sinhala	155	73.5	0	0.0	120	96.8
Tamil	19	9.0	132	75.4	0	0.0
Muslim	37	17.5	42	24.0	4	3.2
Other	0	0.0	1	0.6	0	0.0
Religion						
Buddhist	137	64.9	0	0.0	120	96.8
Hindu	13	6.2	120	68.6	0	0.0
Christian	23	10.9	13	7.4	0	0.0
Islam	38	18.0	42	24.0	4	3.2
Highest educational level achieved						
No schooling	1	0.5	3	1.7	0	0.0
Grade 1-5	13	6.3	57	32.9	4	3.3

Grade 6-11	161	77.4	102	59.0	104	85.2
Ordinary level and above	33	15.8	11	6.4	14	11.5
Employed at present						
Yes	209	100.0	175	100.0	123	99.2
No	0	0.0	0	0.0	1	0.8
Occupation of the spouse according to the ISCO classification						
Armed forces	11	5.3	0	0.0	39	33.2
Occupations						
Managers	2	1.0	0	0.0	0	0.0
Professionals	2	1.0	1	0.6	1	0.8
Technicians and associates	8	3.9	0	0.0	2	1.7
Professionals						
Clerical support workers	7	3.4	1	0.6	0	0.0
Service and sales workers	23	11.2	23	13.5	28	23.1
Skilled agricultural,forestry and fishery workers	9	4.4	30	17.6	15	12.4
Craft and related trades workers	69	33.5	39	22.9	12	9.9
Plant and machine operators and assemblers	37	18	7	4.1	15	12.4
Elementary occupations	38	18.4	69	40.6	9	7.4

4.12 Information related pregnancy and use of field health services by district

Proportion with a planned pregnancy was highest in Batticaloa (85%) and was approximately twice the proportion in Colombo (46%) and Anuradhapura (48%). Proportions who had received services from the Public Health Midwife after marriage prior to the current pregnancy were lowest in Colombo (20%). Among the services obtained prior to pregnancy, the proportion who had received advice on planning a pregnancy was highest in Batticaloa (77%) while information related to contraceptives (86%) and provision of contraceptives (72%) was highest in Anuradhapura (Table 26).

Table 26: Pregnancy related information and field health services received by the pregnant teenagers by district

Characteristic	Colombo		Batticaloa		Anuradhapura	
	Number (n=211)	%	Number (n=175)	%	Number (n=124)	%
Pregnancy						
Planned	96	45.5	147	85	59	47.6
Not planned	115	54.5	26	15	65	52.4
Contraceptive use prior to pregnancy in those who had not planned the pregnancy						
Not used	18	8.5	10	5.8	36	29.0
Used	97	46.0	16	9.2	29	23.4
If used the type of contraceptive method						
Traditional	14	6.8	8	4.6	29	23.4
Modern	3	1.5	2	1.2	7	5.6
Knows the area Public Health Midwife						
Yes	210	100.0	170	97.7	122	98.4
No	0	0.0	4	2.3	2	1.6
Know how to contact/meet the area Public Health Midwife						
Yes	209	99.5	164	94.3	114	91.9
No	1	0.5	10	5.7	10	8.1
Service obtained from Public Health Midwife						
Yes	42	20.3	92	53.2	65	53.3
No	165	79.7	81	46.8	57	46.7
Type of services recieved from Public Health Midwife among those who have recieved services						
Advise on healthy sexual relationship						
Yes	16	38.1	51	55.4	21	32.3
No	26	61.9	41	44.6	44	67.7
Advise on planning a pregnancy						
Yes	13	31.0	71	77.2	39	60.0
No	29	69.0	21	22.8	26	40.0
Information related to contraceptive methods						
Yes	17	40.5	26	28.3	56	86.2
No	25	59.5	66	71.7	9	13.8
Supplied/provided a contraceptive method						
Yes	19	45.2	54	58.7	47	72.3
No	23	54.8	38	41.3	18	27.7
Advise for mental preparation of pregnancy						
Yes	2	4.8	30	32.6	21	32.3
No	40	94.2	62	67.4	44	67.7
Discussed with the husband and family members regarding pregnancy						
Yes	2	4.8	11	12.0	27	41.5
No	40	94.2	81	88.0	38	58.5
Advices on adverse outcome of teenage pregnancy						
Yes	19	45.2	30	32.6	57	87.7
No	23	54.8	62	67.4	51	12.3

4.13 Basic information on the family members by district

Age pattern of the mothers of pregnant teenagers were similar across all districts. The lowest proportion of mothers who had 'ever worked abroad' was reported from Colombo district (29%) (Table 27).

Table 27: Basic information on the family members by district

Characteristic	Colombo		Batticaloa		Anuradhapura	
	Number (n=211)	%	Number (n=175)	%	Number (n=124)	%
Mother's Current age						
=<35	32	15.1	26	14.9	15	12.1
36–40	61	28.9	58	33.1	46	37.1
41–45	56	26.5	43	24.6	25	20.2
>46	50	23.7	37	21.1	36	29.0
Not alive	6	2.8	7	4.0	2	1.6
No response	6	2.8	4	2.3	0	0.0
Mother ever worked abroad						
Yes	61	28.9	64	36.8	44	35.8
No	144	70.6	110	63.2	79	64.2
No response	1	0.5	0	0.0	0	0.0
Age of marriage of any married sister among those who had married sisters						
At or less than 19 years	48	24.5	46	30.1	26	26.0
More than 19 years	148	75.5	107	69.9	74	74.0
Age of first pregnancy of any sister among those who had sisters						
At or less than 19 years	26	14.3	27	19.7	20	20.4
More than 19 years	156	85.7	110	80.3	78	79.6

5. Risk factors for teenage pregnancy

In order to identify risk factors associated with teenage pregnancy, data on selected variables were compared between pregnant teenagers (study group) and non-pregnant females of the same age group (comparison group), irrespective of their marital status.

In the univariate analysis, the magnitude of the risk was assessed by calculating the Odds Ratios (OR) and 95% confidence intervals. Statistical significance (p value) for the association was based on the Chi-square test. In the tables to follow, the results of this analysis are also presented as comparison of proportions related to specified variables between the two groups. Number of respondents included for each variable varied depending on the relevance of the variable or due to missing values.

Finally a multivariate modelling was performed to identify the adjusted risk factors for teenage pregnancy. All factors that showed a significance level with a p value less than 0.2 in the univariate analysis were included in the modelling.

5.1 Socio-demographic risk factors

Comparison of socio-demographic factors in Table 28 shows that having a lower level of education, i.e., ordinary level or below (OR=2.48, 95% CI 1.72-3.57) and instability of place of living as indicated by having changed their residence within last 2 years (OR=1.86, 95%CI 1.26-2.75) showed a higher risk for teenage pregnancy. Odds of occurrence of a teenage pregnancy was significantly high among Muslim females (OR=1.57, 95% CI 1.09-2.25) compared to Sinhalese. Analysis by religion also indicated a significantly higher risk of teenage pregnancy in females belonging to the Islamic faith (OR=1.54; 95%CI 1.07-2.23).

Table 28: Comparison of socio-demographic factors between teenage pregnant females and teenage non-pregnant females

Socio-demographic factors	Pregnant teenagers n=510		Non-pregnant teenagers n=508		OR (Confidence Intervals)	p value
Ethnicity						
Sinhala	269	52.7	300	59.1	1.00	0.050
Tamil	153	30.0	146	28.7	1.17 (0.88–1.55)	0.275
Muslim	87	17.3	62	12.2	1.57 (1.09–2.25)	0.016
Religion						
Buddhist	243	47.6	264	52.0	1.00	0.034
Hindu	140	27.5	127	25.0	1.20 (0.89–1.61)	0.234
Christian	39	7.6	55	10.8	0.77 (0.49–1.20)	0.251
Islam	88	17.3	62	12.2	1.54 (1.07–2.23)	0.021
Highest school education						
Above O/L	49	9.6	106	20.9	1.00	0.000
O/L or below	461	90.4	402	79.1	2.48 (1.72–3.57)	
School leaving age						
Above 16	97	20.9	64	24.8	1.00	0.222
16 or less	368	79.1	194	75.2	1.25 (0.87–1.795)	

Reason for leaving school						
Not failure in education	322	64.0	222	64.0	1.00	0.991
Failure in education	181	36.0	125	36.0	1.00 (0.75–1.33)	
Employment						
Not engaged in a paid work during last one year	377	73.7	284	78.0	1.00	0.145
Engaged in a paid work during last one year	133	26.3	79	22.0	1.27 (0.92–1.74)	
Stability of place of living						
Participant and her parents did not changed the residence within last 2 years	428	84.4	454	91	1.00	0.002
Participant and her parents changed the residence within last 2 years	79	15.6	45	9.0	1.86 (1.26–2.75)	

5.2 Risk factors related to spouse

Table 29 presents the assessment of risk factors related to the spouse between pregnant teenagers and married/co-habiting non-pregnant teenagers. Nearly 100% of the spouses of teenage-pregnant mothers and 89% of spouses among the non-pregnant group were 'currently employed'. However, this analysis is based on a very small number in the 'not employed' group, hence poses limitations in drawing conclusions. Spouse being engaged in occupations other than armed forces (OR=1.93, 95% CI 1.12-3.33, p=0.018) was found to be a risk factor for a teenage pregnancy. Other socio-demographic factors of the spouse considered in this analysis were not significantly associated with a teenage pregnancy. Similar to ethnicity and religion of the female, there were higher odds for having a teenage pregnancy if the spouse belonged to Muslim ethnicity/Islamic faith.

Table 29: Comparison of socio-demographic characteristics of the spouse between teenage pregnant females and teenage non-pregnant females

Socio-demographic factors of the spouses/ partners	Pregnant teenagers n=510		Teenagers married/ cohabiting non-pregnant n=155 (353 Unmarried)		OR (Confidence Interval)	p value
Age of the spouse (years)						
Less than 25	342	67.3	115	92.5	1.00	0.670
25 and above	166	32.7	38	7.5	1.47 (0.97–2.22)	
Ethnicity of the spouse						
Sinhala	275	53.9	95	61.3	1.00	0.002
Tamil	151	29.6	53	34.2	0.98 (0.67–1.45)	0.936
Muslim	84	16.5	7	4.5	4.10 (1.83–9.17)	0.001
Religion of the spouse						
Buddhist	257	50.4	87	56.1	1.00	0.002
Hindu	133	26.1	53	34.2	0.85 (0.57–1.27)	0.425

Christian	36	7.1	8	5.2	1.52 (0.68–3.40)	0.305
Islam	84	16.5	7	4.5	4.06 (1.81–9.12)	0.001
Highest school education						
O/L or below O/L	445	88.5	136	90.7	1.00	0.452
Above O/L	58	11.5	14	9.3	1.27 (0.69–2.34)	
School leaving age						
16 or less than 16	149	73.8	15	88.2	1.00	0.202
More than 16	53	26.2	2	11.8	2.67 (0.59–12.06)	
Vocational training						
Not undergone vocational training	458	96.4	63	98.4	1.00	0.413
Undergone vocational training	17	3.6	1	1.6	2.34 (0.31–17.875)	
Current employment						
Not Employed	1	0.2	3	2.2	1.00	0.037
Employed	507	99.8	136	97.8	11.18 (1.15–108.37)	
Occupation						
Armed forces	50	10.1	22	17.7	1.00	0.018
Occupations other than armed forces	447	89.9	102	82.3	1.93 (1.12–3.33)	

5.3. Risk factors related to marital status

When considering the marital status, being reported as 'legally' married as opposed to co-habiting with the spouse/partner was found to be a risk factor for teenagers to become pregnant (OR=1.93, 95% CI 1.27-2.95, p=0.002). Among the teenagers, age at marriage of the female nor the spouses' age at marriage were significant risk factors (Table 30).

Table 30: Comparison of factors related to marriage between teenage pregnant females and teenage non-pregnant females

Factors related to marriage/cohabiting status	Pregnant teenagers n=510		Teenagers married/ cohabiting non-pregnant n=155 (353 Unmarried)		OR (Confidence Interval)	p value
Age at marriage/cohabiting of the female (years)						
18 or less than 18	420	82.8	131	86.8	1.00	0.254
More than 18	87	17.2	20	13.2	1.33 (0.80–2.29)	
Age at marriage/cohabiting of the female (years)						
17 or less than 17	261	51.5	91	60.3	1.00	0.058
More than 17	246	48.5	60	39.7	1.43 (0.99–2.07)	
Age at marriage/cohabiting of the spouse/partner (years)						
24 or Less than 24	378	74.6	125	82.8	1.00	0.380
More than 24	129	25.4	26	17.2	1.64 (1.03–2.61)	
Parental consent for marriage						
With parental consent	346	69.1	114	74.5	1.00	0.197
Without parental consent	155	30.9	39	25.5	1.31 (0.87–1.97)	

Decision about marriage						
Marriage was a sudden decision	158	31.0	55	35.9	1.00	0.255
Marriage was not a sudden decision	351	69.0	98	64.1	1.25 (0.85–1.82)	
Current living arrangement						
Unmarried or cohabiting	84	16.6	43	27.7	1.00	0.002
'Legally' married	423	83.4	112	72.3	1.93 (1.27–2.95)	

5.4 Socio-demographic factors of the immediate family members as risk factors

Socio demographic factors related to the mothers and fathers of the respondents were studied and are presented in Tables 31 and 32. Teenage females whose mothers had an education level of grade 5 or less (OR=1.53, 95% CI 1.19–1.97, p<0.001), or had ever worked abroad (OR=1.78, 95% CI 1.35–2.36, p<0.001) were at a higher risk for a teenage pregnancy. Mother's age at marriage or first pregnancy was not a predictor of teenage pregnancy of the daughter. Similar to maternal education, father's education level being grade 5 or less, (OR=2.01, 95% CI 1.54–2.61, p<0.001) was found to be risk factors for a teenager to become pregnant.

Table 31: Comparison of socio demographic factors related to mothers of teenage pregnant females and teenage non-pregnant females

Details about the mother	Pregnant teenagers n=510		Teenagers non pregnant n=508		OR (Confidence Interval)	p value
Living status						
Not currently alive	15	2.9	21	4.1	1.00	0.305
Currently alive	495	97.1	487	95.9	1.42 (0.73–2.79)	
Current age of the mother						
=<35	73	15.1	81	16.8	1.00	0.448
More than 35	412	84.9	400	83.2	1.14 (0.81–1.61)	
Highest educational level [cases =24 no responses, controls= 27 no responses]						
More than Grade 5	226	46.5	276	57.1	1.00	0.001
Grade 5 or less	260	53.5	207	42.9	1.53 (1.19–1.98)	
Mother's income						
Has not a regular income	15	8.1	19	13.8	1.00	0.101
Has a regular income	171	91.9	119	86.2	1.82 (0.89–3.725)	
Worked abroad						
Has not worked abroad	338	66.7	396	78.1	1.00	0.000
Has ever worked Abroad	169	33.3	111	21.9	1.78 (1.35–2.36)	
Duration work abroad if ever worked						
For more than 5 years	75	75	55	83.3	1.00	0.205
For 5 or Less than 5 years	25	25	11	16.7	1.67 (0.76–3.67)	

Details about the mother	Pregnant teenagers n=510		Teenagers non pregnant n=508		OR (Confidence Interval)	p value
Participant's age at the time mother's work abroad						
More than 10 years	47	33.3	44	42.7	1.00	0.135
10 or less than 10 years	94	66.7	59	57.3	1.49 (0.88–2.52)	
Mother ever worked in country being resident outside home						
Not worked outside home	496	98.4	494	98.8	1.00	0.602
Worked outside home	8	1.6	6	1.2	1.33 (0.46–3.855)	
If worked in country being resident outside home duration						
More than 5 years	1	20.0	1	25.0	1.00	
Five or less years	4	80.0	3	75.0	1.33 (0.57–31.12)	0.858
Participant's age when mother in country being resident outside home duration						
More than 10 years	4	50.0	3	60.0	1.00	0.725
10 or Less than 10 years	4	50.0	2	40.0	1.50 (0.16–14.42)	
Mother's age at marriage						
Over 19	132	31.8	143	34.6	1.00	0.390
19 or less than 19 years	283	68.2	270	65.4	1.14 (0.85–1.52)	
Mother's age at first pregnancy						
More than 19	168	44.4	186	48.3	1.00	0.284
19 or less than 19	210	55.6	199	51.7	1.17 (0.88–1.55)	

Table 32: Comparison of paternal characteristics between teenage pregnant females and teenage non-pregnant females

Details about the father	Pregnant teenagers n=510		Teenagers non pregnant n=508		OR (Confidence Interval)	p value
Living status						
Not alive	57	11.2	71	14.0	1.00	0.175
Alive	452	88.8	435	86.0	1.29 (0.89–1.88)	
Father's current age						
More than 35	425	96.8	412	97.9	1.00	0.343
35 or less than 35	14	3.2	9	2.1	1.51 (0.65–3.52)	
Highest educational level						
More than Grade 5	217	46.9	283	63.9	1.00	0.000
Grade 5 or less	246	53.1	160	36.1	2.01 (1.54–2.62)	
Father's income						
Has not a regular income	57	14	65	15.7	1.00	0.495
Has a regular income	351	86	350	84.3	1.14 (0.78–1.68)	
Worked abroad						
Has not worked abroad	467	91.9	468	92.5	1.00	0.739
Has ever worked abroad	41	8.1	38	7.5	1.08 (0.68–1.71)	

Duration of work abroad if ever worked						
For more than 5 years	23	71.9	29	93.5	1.00	0.037
For 5 or less than 5 years	9	28.1	2	6.5	5.67 (1.12–28.87)	
Participant's age at the time father's work abroad						
More than 10 years	14	42.4	18	56.3	1.00	0.267
10 or less than 10 Years	19	57.6	14	43.8	1.75 (0.65–4.66)	

Among the pregnant teenagers, only 122 had married sisters with the comparable number among non pregnant teenagers being 151. Comparison of details of married sisters between the two groups showed that a teenage pregnancy among sisters was not a risk factor for the teenagers to become pregnant (OR 1.05 95% C I-1,99, p=0.878).

5. 5 Level of support from family, peers and teachers as risk factors

As shown in Table 33, the risk of a teenage pregnancy was high when the following aspects in the family were poor or very poor: the level of strictness of rules and regulations in the family (OR=2.41, 95% CI 1.66-3.51, p<0.001), level of freedom within the family to discuss problems regarding their love affairs (OR=2.28, 95% CI 1.49-3.49), p<0.001); and the level of freedom within the family to discuss issues related to sexuality (OR=3.04, 95% CI 1.88-4.91, p<0.001). Risk of teenage pregnancy was also high when the level of support from teachers was poor/very poor (OR=3.15, 95% CI 2.07-4.80, p<0.001) and peer support was poor/very poor (OR=3.67, 95% CI 2.48–5.44), p<0.001).

Table 33: Comparison of level of support from family, peers and teachers between teenage pregnant females and teenage non-pregnant females

Opinion regarding support (family/peers/teachers)	Pregnant teenagers n=510		Teenagers non-pregnant n=508		OR (Confidence Interval)	p value
Maternal care and bonding during childhood						
The level of maternal care experienced as a child						
Excellent	322	63.1	312	61.7	1.00	
Good/average	134	26.3	145	28.7	1.12 (0.84–1.48)	0.442
Poor/very poor	54	10.6	49	9.7	0.94 (0.62–1.42)	0.758
The level of bonding as a child with the mother						
Excellent	284	55.7	288	56.8	1.00	
Good/average	174	34.1	169	33.3	1.04 (0.80–1.365)	0.752
Poor/very poor	52	10.2	50	9.9	1.06 (0.69–1.61)	0.805
Family interactions						
The level of strictness of rules and regulations in the family						
Excellent	65	12.8	120	23.7	1.00	
Good/average	262	51.8	249	49.2	1.94 (1.37–2.75)	0.000
Poor/very poor	179	35.4	137	27.1	2.41 (1.66–3.51)	0.000
The level of freedom within the family to discuss problems regarding growth during puberty						
Excellent	125	24.7	120	23.8	1.00	
Good/average	311	61.3	328	65.0	0.91 (0.68–1.22)	0.532
Poor/very poor	71	14.0	57	11.3	1.20 (0.78–1.84)	0.414

Opinion regarding support (family/peers/teachers)	Pregnant teenagers n=510		Teenagers non-pregnant n=508		OR (Confidence Interval)	p value
The level of freedom within the family to discuss problems regarding own love affairs						
Excellent	53	10.6	70	14.4	1.00	
Good/average	259	51.8	308	63.2	1.11 (0.75–1.65)	0.601
Poor/very poor	188	37.6	109	22.4	2.28 (1.485–3.49)	0.000
The level of freedom within the family to discuss issues related to sexuality						
Excellent	36	7.1	53	10.8	1.00	
Good/average	237	47.0	324	66.3	1.08 (0.68–1.70)	0.750
Poor/very poor	231	45.8	112	22.9	3.04 (1.88–4.91)	0.000
The level emotional support received from the family						
Excellent	148	29.2	152	30.2	1.00	0.947
Good/average	304	60.1	298	59.1	1.05 (0.79–1.38)	0.742
Poor/very poor	54	10.7	54	10.7	1.03 (0.66–1.59)	0.905
There is somebody in the family to discuss about problems that hurts the participant						
Good/average	79	15.7	99	19.5	1.00	
Excellent	425	84.3	409	80.5	1.33 (0.93–1.83)	0.112
Support of peers						
The level support in general from the peers						
Excellent	64	12.6	97	19.2	1.00	
Good/average	288	57.0	335	66.2	1.30 (0.92–1.85)	0.141
Poor/very poor	154	30.4	74	14.6	3.15 (2.07–4.80)	0.000
Support of teachers						
The level support in general from the teachers						
Excellent	132	26.1	206	40.6	1.00	
Good/average	254	50.2	250	49.3	1.57 (1.20–2.10)	0.001
Poor/very poor	120	23.7	51	10.1	3.67 (2.48–5.44)	0.000

5.6. Self-confidence as a risk factor

The risk of teenage pregnancy was high when the level of self confidence in decision making was reported as excellent (OR=2.97, 95% CI 2.22-3.99, p<0.001).

5.7. Knowledge on fertility and contraceptives as risk factors

As shown in Table 34, knowledge on fertility among the pregnant teenagers at the time of interview, was significantly higher than among the non-pregnant group. Pregnant teenagers had significantly better knowledge on the following aspects: ‘a girl is capable of getting pregnant at any time after she attains menarche’ (OR=1.51, 95% CI 1.17-1.96, p=0.002); ‘conception can occur even with a single unprotected sexual intercourse’ (OR=1.72, 95% CI 1.33-2.21, p<0.001); and ‘there is a specific period in the menstrual cycle in which a woman can get pregnant’ (OR=2.09, 95% CI 1.62-2.70, p<0.001).

A respondent was categorized as having a ‘good’ level of knowledge related to the fertility cycle if she gave correct responses to all three questions and as ‘poor’ if any of the responses were incorrect. Having a good level of overall knowledge on fertility (OR 1.79, 95%CI 1.34–2.38, p<0.001) was associated with teenage pregnancy.

Table 34: Comparison of knowledge on fertility between teenage pregnant females and teenage non-pregnant females aged 15-19 years

Knowledge related to conception/menstrual cycle	Pregnant teenagers n=510		Teenagers non pregnant n=508		OR (Confidence Interval)	p value
Knows that a girl is capable of getting pregnant at any time after she attains menarche						
No	152	29.9	197	39.2	1.00	0.002
Yes	356	70.1	305	60.8	1.51 (1.17–1.96)	
Knows that conception can occur even with a single unprotected sexual intercourse						
No	180	35.4	244	48.5	1.00	0.000
Yes	328	64.6	259	51.5	1.72 (1.33–2.21)	
Knows that there is a specific period in the menstrual cycle in which a woman can get pregnant						
No	262	51.6	345	69.0	1.00	0.000
Yes	246	48.4	155	31.0	2.09 (1.62–2.70)	
Overall knowledge						
Poor	346	68.2	392	79.4	1.00	0.000
Good	161	31.8	102	20.6	1.79 (1.34–2.38)	

At the time of interview, a significantly higher proportion of pregnant teenagers compared to their non-pregnant counterparts knew that delayed menstruation following unprotected sexual intercourse could be due to pregnancy (OR=1.64, 95% CI 1.27-2.13, p<0.001).

Lack of knowledge that 'teenage females are not physically prepared for a pregnancy' (OR= 1.47, 95% CI 1.14-1.89, p=0.003) and 'teenage females are not mentally prepared for a pregnancy' (OR=1.34, 95% CI 1.04-1.73, p=0.023 were found to be risk factors for teenage pregnancy (Table 35).

A respondent was categorized as having a 'good' level of knowledge on disadvantages of teenage pregnancies if she gave correct responses to all four questions. Overall, having poor knowledge on the disadvantages of teenage pregnancies was associated with higher risk of teenage pregnancy (OR=2.06, 95% CI 1.52–2.78, p<0.001).

Table 35: Comparison of knowledge on disadvantages of a teenage pregnancy between teenage pregnant females and teenage non-pregnant females

Knowledge on outcomes of teenage pregnancy to mother and baby	Pregnant teenagers n=510		Teenagers non pregnant n=508		OR (Confidence Interval)	p value
Knows that pregnancy in teenage mothers can lead to babies with Low Birth Weight						
No	248	48.8	246	49.4	1.00	0.854
Yes	260	51.2	252	50.6	1.02 (0.80–1.31)	
Knows that pregnancy in teenage mothers can lead to birth complications						
Yes	196	38.7	215	43.0	1.00	0.169
No	310	61.3	285	57.0	1.19 (0.93–1.54)	
Knows that females at teenage are not physically prepared for a pregnancy						
Yes	185	36.6	229	45.9	1.00	0.003
No	320	63.4	270	54.1	1.47 (1.14–1.89)	

Knows that females at teenage are not mentally prepared for a pregnancy						
Yes	186	36.8	219	43.8	1.00	0.023
No	320	63.2	281	56.2	1.34 (1.04–1.73)	
Overall knowledge on outcomes of teenage pregnancy to mother and baby						
Good	86	17.1	145	29.7	1.00	0.000

A significantly higher proportion of pregnant teenagers were able to name at least four modern contraceptive methods (OR=1.50, 95% CI 1.00-2.25, p=0.048) compared to non-pregnant teenagers. Though higher proportions of pregnant teenagers had unfavourable attitudes towards use of contraceptives, the differences were not significant (Table 36).

Table 36: Comparison of attitudes toward use of contraceptives between teenage pregnant females and teenage non-pregnant females

Attitudes towards use of contraceptives	Pregnant teenagers n=510		Teenagers non pregnant n=508		OR (Confidence Interval)	p value
The number of children born to a family should not be limited by artificial methods						
Disagreed	236	46.6	229	48.3	1.00	0.600
Agreed	270	53.4	245	51.7	1.07 (0.83–1.37)	
Using family planning methods can harm the future pregnancies						
Disagreed	120	23.9	119	25.1	1.00	0.663
Agreed	382	76.1	355	74.9	1.07 (0.80–1.43)	
Using condoms reduces sexual pleasure						
Disagreed	47	9.3	46	9.8	1.00	0.815
Agreed	457	90.7	425	90.2	1.05(0.69–1.61)	
Contraceptive methods are not suitable for young females						
Agreed	322	63.9	310	65.3	1.00	0.653
Disagreed	182	36.1	165	34.7	1.06(0.82–1.38)	
Practicing family planning is a sin						
Disagreed	301	59.4	318	67.4	1.00	0.100

A significantly higher proportion of pregnant teenagers disagreed that there should be special health services for young people to be provided with contraceptives (OR=1.51 95 CI 1.12-2.12, p =0.008).

5.8 Attitudes toward service provision for contraceptives as risk factors

As shown in Table 37, the attitudes regarding sub fertility and early pregnancy were not found to be risk factors for teenage pregnancy.

Table 37: Comparison of attitudes on sub fertility and early pregnancy between teenage pregnant females and teenage non-pregnant females

Attitudes of becoming pregnant	Pregnant teenagers n=510		Teenagers non pregnant n=508		OR (Confidence Interval)	p value
If a couple does not have babies it is always the fault of the woman						
Agreed	84	16.5	104	219	1.00	0.330
Disagreed	424	83.5	371	781	1.42 (1.03–1.95)	
Having babies as early as possible is healthy for the mother						
Agreed	263	52.1	266	560	1.00	0.219

5.9 Use of contraceptives as a risk factor

Table 38, indicates that a higher proportion of teenagers had not used any contraceptive prior to pregnancy compared to non-pregnant married/cohabiting teenagers who were using contraceptives at the time of survey (OR=2.71, 95% CI 1.75-4.19, p<0.001). Thus, non-use of contraceptives can be considered as a significant predictor of teenage pregnancies. Among the users of contraceptives, the proportion using traditional methods was higher among the pregnant teenagers compared to the non-pregnant group. However, the association was not statistically significant, probably due to the small number of observations.

Table 38: Comparison of use of contraceptives between teenage pregnant females and teenage non-pregnant and married/cohabiting females

Use prior to pregnancy or current use	Pregnant teenagers n=510		Married/co-habiting Teenagers non pregnant n=155 (353 Unmarried)]		OR (Confidence Interval)	p value
Use of contraceptives						
Used	64	31.1	83	55.0	1.00	0.000
Not used	142	68.9	68	45.0	2.71 (1.75–4.19)	
Type of contraceptive (only among users)						
Modern	51	81.0	83	95.2	1.00	0.110
Traditional	12	19.0	4	4.80	4.65 (1.42–15.20)	

Table 39 shows that a higher proportion of teenagers had not used a contraceptive prior to pregnancy due to fear of side effects compared to non-pregnant married/cohabiting teenagers who were using contraceptives at the time of survey (OR=2.64, 95% CI 1.08-6.44, p=0.034). Lack of awareness on family planning among non-users was not significantly associated with teenage pregnancy.

Table 39: Comparison of reasons for not using contraceptives between teenage pregnant females and teenage non-pregnant married/cohabiting females

Reasons for not using contraceptives	Pregnant teenagers n=142 (64 used contraception,304 planned pregnancies)		Married/co-habiting teenagers/non-pregnant n=68 (83 used contraception, 353 unmarried)		OR (Confidence Interval)	p value
Awareness of family planning methods						
Aware	74	57.4	35	100.0	1.00	0.997
Not aware	55	42.6	0	0.00	1.47 (1.30–1.68)	
Awareness of how to obtain contraceptive services						
Aware	121	93.8	34	97.1	1.00	0.453
Not aware	8	6.2	1	2.9	2.25 (0.27–18.60)	
Did not use contraceptives due to religious concerns						
No	127	98.4	35	100.0	1.00	0.999
Yes	2	1.60	0	0.00	1.28 (1.18–1.38)	
Did not use contraceptives due to fear of side effects						
Yes	17	13.2	10	28.6	1.00	0.034
No	112	86.8	25	71.4	2.64 (1.08–6.44)	

5.10 Adjusted risk factors for teenage pregnancy: multiple logistic regression

Adjusted risk factors for teenage pregnancy were evaluated using multiple logistic regression modelling. All the factors that showed a significance level with a p value of less than 0.2 in the univariate analysis were included in the modelling. The results are shown in Table 40.

Belonging to the ethnicity groups, either Tamil (OR=3.3, 95% CI 1.8-5.96, p<0.001) or Muslim (OR=1.92, 95% CI 1.01-3.65, p=0.04), being 'legally married' (OR=16.6, 95% CI 10.9-25.6, p<0.001), the highest educational level being ordinary level or below ordinary level (OR=1.95, 95% CI 1.1-3.46, p=0.022), having a poor overall knowledge on disadvantages of a teenage pregnancy (OR=3.79, 95% CI 2.39-6.04, p<0.001), perception that the level of strictness of rules and regulations in the family is poor/very poor (OR=2.01, 95% CI 1.08-3.75, p=0.027), opinion on the teenager regarding the level of support in general from the teachers is poor/very poor (OR=3.47, 95% CI 1.76-6.88, p<0.001) and opinion that her level of self confidence in decision making is excellent (OR=2.11, 95% CI 1.34-33.11, p=0.001) were the risk factors for teenage pregnancy as identified by the adjusted odds ratios.

Table 40: Adjusted significant risk factors for teenage pregnancy

Factors	Adjusted OR	95.0% C.I.		p value
		Lower	Upper	
Ethnicity of the teenager				
Sinhala	1.0			
Tamil	3.31	1.833	5.968	0.000
Muslim	1.92	1.011	3.657	0.046
Current living arrangement of the teenager Unmarried/co-habiting Legally married	 1.0 16.60	 10.9	 25.6	 0.000

Highest education of teenager				
Above ordinary level	1.0			
Ordinary level below ordinary level	1.953	1.102	3.462	0.022
Overall knowledge on disadvantage of a teenage pregnancy				
Good	1.0			
Poor	3.797	2.389	6.036	0.000
Opinion on the teenager regarding the level of strictness of rules and regulations in the family				
Excellent	1.000			
Good/average	1.438	0.830	2.492	0.195
Poor/very poor	2.016	1.084	3.750	0.027
Opinion on the teenager regarding the level of support in general from the teachers				
Excellent	1.00			
Good/average	1.336	0.857	2.083	0.201
Poor/very poor	3.477	1.758	6.877	0.000
Opinion on the teenager regarding the level of self confidence in decision making				
Good/average	1.0			
Excellent	2.11	1.34	33.11	0.001

6. In-depth analysis of the circumstances of teenage pregnancy: findings from the qualitative inquiry

A total of 79 in depth interviews with teenage pregnant females, adolescent girls and the spouses of teenage mothers were conducted in both Sinhala and Tamil languages depending on the mother tongue of the interviewee. In addition, 17 focus group discussions were carried out among mothers of teenage pregnant females, school teachers and health staff. In-depth interviews and focus group discussions were conducted in all three districts covering 10 MOH areas. The analysis is presented under eight sub-headings.

6.1 Initiating a relationship

The age of initiating a love relationship in girls was as low as 11-12 years. This was a common practice in all three districts and often the boyfriend was 5 years older or more and usually was in a higher grade in school or a school dropout. In one district, persons in the armed forces in their mid or late twenties were the boyfriends of teenage girls. The discussions revealed that the intention at the beginning of a relationship was to have a boyfriend than actually falling in love. The tendency for early relationships was seen more in low socio-economic households than in the higher strata. This observation may be biased due to the difficulties of enlisting teenage pregnant females of higher socio economic groups to the study.

Often, early initiation of love relationships occurred where there was less parental supervision, was common in households where the mother was working in the Middle East for extended periods, heavy alcohol use of the father leading to domestic violence, severe economic difficulties at home and when the girl was living with relatives other than own parents. It was seen that less supportive relationships among siblings, immature or less coping abilities at family level, harsh punishments by parents and lack of interest in education from the family also contribute to early intimate relationships and teenage pregnancies.

Usually, the boyfriend was from the same village or from a nearby village. However, many girls had initiated their relationship with an unknown person through a telephone conversation. These “wrong number” initiated relationships start as a consequence of a telephone call from an unknown person. Such relationships were common in Anuradhapura and Colombo and rare in Batticaloa. Mobile phone was the main method of communication used by a majority. Among school children, sharing a phone was common. Individual students purchase their own SIM card to use in a shared phone. Mobile phone SIM cards are readily available for a nominal fee or given free. Often the boyfriend bears the communication costs.

It was seen that some relationships become very close in quick time, with the couple eloping within a few days of knowing each other, the attraction being mostly on the physical appearance. Intimacy was quick to be part of the relationship when the female partner was younger and the male was from the armed forces. Being out of school is recognized almost as a trigger for boys to start intimate relationships with underage girls in low socio economic situations.

In two districts, a majority of the marriages were seen to occur without the blessings of the girls’ parents. The decision to elope was the commonest way of starting married life. In the district where Muslim ethnic group predominates, parents of both sides bless the marriage and some were arranged marriages. The decision for marriage, or living together, sparks off when the girl was confronted with objections from home or the boyfriend forces her to elope. The request generally comes from the male partner and the female accepts it in quick time almost solely based on

emotions. This axis of emotional demand and the decision to marry appear not to be affected by other externalities such as social, economic and health consequences. Risk of pregnancy and its possible complexities were not considered by the couple. The emotional bonding seems to shield all other factors. The girls when making the decision seems to be not bothered about the legal implications of marriage. The assurance given by the partner to legally marry when she reaches the stipulated age or the trust placed in him removes the necessity of discussing this issue before taking the decision. It was clearly seen that the girl did not take any advice from peers, siblings or any other relatives before taking the decision.

6.2 Insights into marriage

At the time of the interview most pregnant teenagers had been married for a few months to about two years. The idea of collective responsibility in managing affairs within wedlock has not been perceived by a majority. The concept of developing the family was mostly restricted to caring for a child. Sequence of pregnancy, delivery and caring for the newborn seems instilled in their minds by the inputs of the Public Health Midwife and few elderly women and were not perceived as an integrated nexus or complexities of a married life. Hence, the events in a marriage are perceived by the teenager as an unfolding drama where one episode leads to another than a mix of complicated human relationships. A majority of the teenagers were reluctant to seek advice on issues in the marriage from others unless the in-laws and elderly neighbours actively forced them into a discussion. The feeling of guilt, shyness to talk openly on the topic and inadequate encouragement from the partner were factors that prevented them from seeking advice and support.

6.3 Circumstances influencing the decision

Immaturity of the partners particularly the female seems to be a catalyst for the decision to marry. Circumstances in which these marriages occur present a picture where parental control of children was minimal or absent. The economic situation was often below the sustenance level with the parents being mainly concerned with day to day survival than quality care in bringing up children. Poverty drives complete attention towards income generation which results in mothers migrating as domestic workers to Middle East or as factory workers in the apparel industry. Others were mostly engaged in unskilled labour or as seasonal farmers. Under these circumstances there is little attention on education and on spending quality time with children. Alcoholism of the farther and domestic violence was seen in many instances. Hence, the parental relationships with the adolescents suffer a huge drawback at a time when they need close supervision and guidance. In a majority of instances, the distant relationship between the parent and adolescent leads to bitter confrontations when a love affair surfaces, leading to the teenager arriving at sudden decisions. Mishandling of love relationships by parents and at school adds fuel to such decisions. Often, the school authorities arrive at harsh decisions such as terminating the studentship. This invariably leads to a cascade of events that makes it hard for the adolescent girl to stay at home. Both interviewees and school authorities highlighted the fact that there was little attention and inputs on reproductive health in schools. This left the adolescent girls in the dark, and hence forced to seek information from peers. This is a major factor for making sudden decisions.

Teenage marriages of older siblings of both partners were common in all districts. The parents of a substantial number of teenage mothers had married early.This is more prominent in some districts.

One of the anticipated barriers for teenage marriages or living together till the legal age is reached was the social stigma. In the interviews with all groups i.e. teenage mothers, their spouses, parents, healthcare workers and teachers, the issue of stigma was mentioned and emphasized. However, it was clearly seen that almost all parents and close relatives tend to accept the reality of teenage marriage and the subsequent pregnancy when it occurs within the family. The initial rejection of the event as stigmatizing and unacceptable clears off within few days to few months. The manner in which the teenage pregnancy is constructed in the face of society is not straightforward rejection or acceptance. It is a complex issue that needs to be viewed in the context of social economic and cultural understanding of the parents and relatives.

It was clear that the objection and rejection by the parents and close relatives of the male partner was minimal. On many occasions it was supportive, especially when the male partner was in the armed service. It was seen that the perceived authority, visible economic stability and the dependence of parents fully or partly on the male partner for their future sustenance contribute to acceptance of his actions. They ultimately rationalize the action on the grounds that teenage marriages and pregnancies was the norm in the past and it did not pose any threat to health.

Arranged marriages or marriages with the blessings of the girl's parents mostly happen in situations of abject poverty. The girl's parent's main desire was to get their daughter married to a person with a stable income. In addition, the parental expectations on education does not go beyond GCE O/L and for many teenage girls in the poverty stricken rural background this means marriage and beginning of a new life.

Serious short comings of the legal system of marriage registration and sub judicial mechanisms that operate to legalize underage marriages also play a part in normalizing teenage marriage and pregnancy in society. Some marriage registrars entertain registration of marriages by changing the age of the bride. A document binding the male partner to register the marriage legally when the girl reaches the appropriate age is also used as an alternative. This is practiced often and provides social acceptability and a "legal" standing in the minds of the community.

6.4 Reactions to being pregnant

Majority of the pregnancies were unplanned. Often, the issue of having children or the risk of becoming pregnant was not discussed between the couple. Even when the male partner had objected to the use of contraceptives, and in instances when the contraceptives were discontinued, the news of the pregnancy was unexpected by a majority of girls. Almost all were scared, when they were told of their pregnancy. The feeling of responsibility of motherhood at a young age and at an unexpected time made them anxious. However, the assurance from the partner and mother-in-law made them feel relieved. Mixed feeling of being scared, happiness and to some extent the guilt of being pregnant at a young age and inadequate preparedness to assume greater responsibility in life seems to contribute to a half hearted acceptance of the state of motherhood in a majority of girls.

For the male partner, pregnancy seems to be a joyful event, particularly when he is from the armed forces and in mid or late twenties. They desire to have children early as it is seen as a strategy to maintain the faithfulness of the wife when the husband is away on duty for a long duration of time and the spouse's parents perceive it as a way of stabilizing a marriage which is not legally valid.

Often, the mother of the girl feels that a teenage pregnancy should have been avoided. Usually, the girl elopes with her spouse and stays away from the parental home and the first contact the

girl has with her parents occur after the pregnancy. In some rural areas, the marriage takes place with the blessings of the parents of both parties on most occasions and pregnancy immediately after the union seems to be the norm.

Although health issues related to pregnancy in adolescents are a priority for the health staff, a majority of pregnant teenagers, their spouses and husband's relatives were not concerned about the health consequences unlike the girls' close relatives. Following the initial halfhearted acceptance of the pregnancy, a majority of pregnant teenagers cope with the new situation in a satisfactory manner. Still it was clear that a majority did not understand the responsibilities of the new role adequately. Girls, who were still not at the age of legal marriage, have no options other than to cope with the situation. The spouse and the relatives of the spouse generally insist on continuing the pregnancy. Most of the time, her only savior is her own mother. However, the pregnant teenager is unable or hesitant to seek her help due to her initial disobedience. Hence, the teenage girls had to adapt to the demands of motherhood willingly or unwillingly.

6.5 Health care provision

In all districts, teenage pregnancies were common among lower middle and lowest social segments, a majority of who mainly rely on the state health system where the Public Health Midwife is the first contact. However, there is no mechanism for the Public Health Midwife to contact or register the newly married 'underage girls' early. Hence, pre-pregnant counseling and family planning services were not offered in a majority and the Public Health Midwife comes in to contact with the couple only when they seek help to register for antenatal care. The relationships between the Public Health Midwife and the teenage pregnant females were cordial. The contact between the Public Health Midwife was initiated mostly by the mother of the husband or an older relative. Often, the primary ante natal care provider is the MOH. This was true for both suburban and rural areas.

It was clear that pregnant teenagers had adequate access to ante natal care. Occasionally, the health staff was harsh on them, but usually there was no discrimination in access to care as was observed from the perceptions of most participants. In Batticaloa, and Anuradhapura the proportion of teenage mothers attending a clinic was high. There were no barriers for a teenager to attend an ANC. However, the lack of pre pregnant care was seen as an issue by the health staff. Ante natal care generally starts with a pregnancy test from a private laboratory, following the advice of a female member of the family leading to a consultation with the Public Health Midwifefor help. On a few occasions a general practitioner was consulted to verify the pregnancy but they subsequently consult the Public Health Midwife for advice and help.

6.6 Daily routine at present

None of the teenage mothers were employed at the time of the interview. There was no difference in employment status in all districts. However, several girls in the Colombo district and few in Anuradhapura who were employed at the time of the marriage stopped it when they 'eloped'. Spouses of those teenagers were opposed to their working outside the home environment and did not allow their wives to work in 'other peoples' places. In Batticaloa, the age of marriage was around 15 to 16 years, at the time of dropping out of school. Thus, they had very little opportunity to find employment. The girls in Colombo were either working in small scale factories or small shops as helpers. In Anuradhapura, most were working in garment factories. However, a majority of girls in all three districts were schooling at the time of marriage.

A majority of teenage mothers were staying with the parents of their spouses or in a separate house in close proximity to them. In Batticaloa, they built separate shelters. These houses did not have even the minimum facilities. In the Colombo district and in the urban part of Anuradhapura district the pregnant teenagers did not have much work to do in the household. The mother-in-law was taking charge of most things. However, in rural parts of Anuradhapura and Batticaloa, the pregnant teenager herself has to do an equal amount of work if they stay with parents. If they were living separately, they did most things by themselves. In all districts other than the rural areas in Batticaloa the girls were spending a lot of time watching television. In Batticaloa most rural households did not have televisions. The favorite progammes of most pregnant teenagers were Hindi films, tele-dramas and musical events. Educational programmes were rarely watched. The ways the girls spend their time provide insights in to the way they had spent their time in their own homes earlier. This reflects some behavioural elements in the lives of adolescents in those communities that show a care free lifestyles and lack of interest in undertaking responsibilities.

6.7 Coping with current responsibilities

It was clear that pregnant teenage female's perceptions on the responsibility were very low in all districts. Hence, they did not think beyond the day-to-day work and had a faint idea about the real responsibilities. Most pregnant teenagers got support from other members in the household or from the spouse in doing daily chores. They were generally relieved from any heavy work.

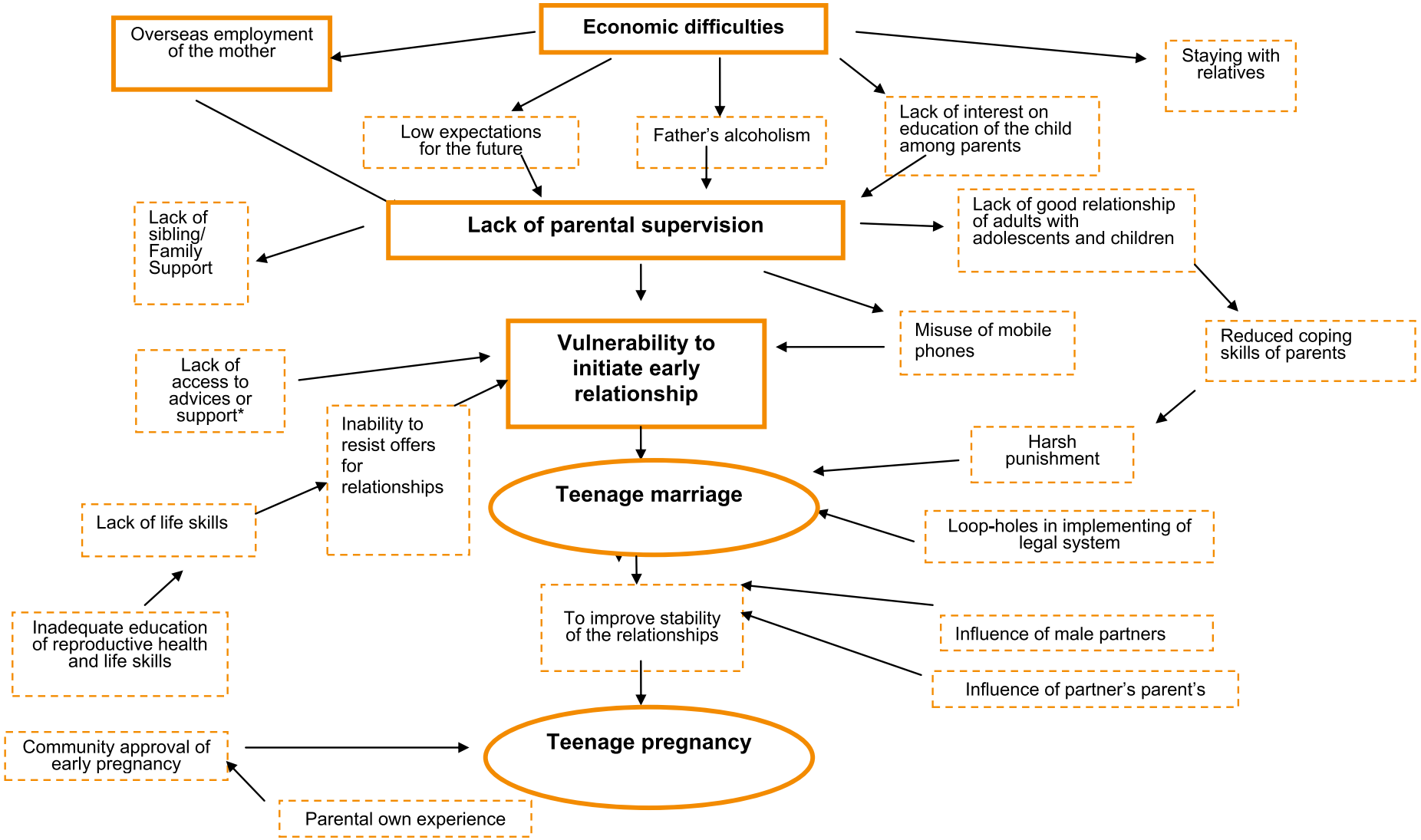
Most pregnant teenagers were satisfied with the support they got from the spouse and the relatives. For most in Anuradhapura, the younger sisters of the husband or the wife of an older brother of the husband became their peers at home. In Batticaloa, it was the women in the neighbourhood, as the new couple often lived separately in a new settlement. In Colombo the situation was different as most pregnant teenagers were mainly seen in the lowest social stratum, where there is no room for an extended family to live in the same household. Hence, the married siblings were living in different places. Hence, the mother- in-law or aunts living close by became their supporters.

6.8 Reflections on the decision

When reflecting on the decision for early marriage and becoming pregnant, almost all pregnant teenagers regretted that they stopped schooling early. Although many of these girls were not good performers in school they felt that at least, attempting the ordinary level examination twice would have been an achievement. In addition, they felt sad at losing the freedom of youth. The responsibilities they have to bear within married life and close scrutiny of husband and in-laws of their whereabouts made them feel that they have lost the freedom of youth. Pregnant teenagers unanimously felt guilty of being pregnant at a time they should have really enjoyed their lives. As a group they were unhappy of losing the opportunity to experience the excitement of the youthful years. Majority were planning to delay the next pregnancy hoping to catch up with lost opportunities. Final reflections of all teenage mothers clearly indicated that serious thoughts should have been given before taking the decision to marry at such a young age.

The circumstances of teenage marriage and pregnancies in the three districts clearly supports the idea of tailor made planning at local settings to prevent teenage pregnancies rather than relying on programmes from the center or other organizations that try to generalize the issue across the country. It is clear that circumstances are context specific thus the solutions have to be derived at district level. There is a need for local level planning to combat the issue of teenage pregnancy rather than falling back on centrally planned ambiguous interventions which have repeatedly failed. The findings from this component are presented in a summary form in Figure 2.

Figure 2: Factors influencing teenage pregnancy at the level of community, family and individual



Conclusions

The data available from the Registrar General's Department indicated a declining trend in the percentage of births to women aged 19 years or less, from the year 2000 to 2006. Comparisons showed that the rate was high in the rural and estate sectors and among Sri Lankan Tamils.

Data from the RHMIS for the years 2007–2009 also showed a declining trend in the percentage of teenage pregnancies.

The DHS 2006/07 indicated that 6.3% of the females aged 15-19 years have started childbearing. The Eastern province had the highest teenage pregnancy rate of 10.2% and Central province, the lowest rate of 4.1%. Percentage of teenage pregnancies declined significantly with increasing levels of education and with increasing wealth quintiles.

Though not strictly comparable, all three sources of secondary data on teenage pregnancy has identified that there is a marked inter-district variation in the teenage pregnancy rates and the districts identified to have high rates of teenage pregnancy by the three different sources was mostly consistent. This indicates that 'intensity' of application of interventions to prevent teenage pregnancy should be district specific.

Furthermore, quantitative and qualitative data from this study revealed deficiencies and inter-district differences in services they received from the Public Health Midwife after marriage and prior to pregnancy. This indicates that the 'focus' of interventions to prevent teenage pregnancy should also be district specific.

Distribution of the pregnant teenagers showed that 41% were from the district of Colombo with 34% from Batticaloa and 24% from Anuradapura. Among them, 60% were in the age group 18 years and above, with 40%, below the legal age for marriage in Sri Lanka. Of the group, 83% reported that they were 'legally' married, with others (17%) reporting that they were co-habiting with the partner.

There were indications from the qualitative component of the study that marriage most often occurred after getting to know about pregnancy. However, only 21% reported having a sexual relationships with the spouse before marriage which most likely to be an'underreported' figure.

The risk factors for teenage pregnancy identified from the community based study included:

- Women or the spouse belonging to Muslim ethnicity and/or Islam religion
- Lower level of education of the teenagers and instability of the place of residence
- Spouse engaged in occupations other than armed forces
- Mother of the teenager having a lower level of education or had 'ever worked abroad'. Similar to maternal education, lower level of education of the father was found to be a risk factor. However, mother's or sisters' age at marriage or first pregnancy were not factors influencing a teenage pregnancy
- Factors in the family environment that showed significant associations were 'poor/very poor' level of strictness of rules and regulations in the family, 'poor/very poor' freedom within the family to discuss problems regarding own love affairs and 'poor/very poor' freedom within the family to discuss issues related to sexuality
- 'Poor/very poor' level of support from teachers and peers as perceived by teenagers.

Level of knowledge on fertility, reproduction and contraception was significantly higher among pregnant teenagers compared to non-pregnant teenagers possibly due to the knowledge acquired during pregnancy. In contrast, teenage pregnant females were less aware about disadvantages of teenage pregnancy than their non-pregnant counterparts.

In a majority (60%) the current pregnancy was planned, and the commonest reason was the 'husband's wish to have a baby' (80%). Almost half of the respondents (49 %) stated that 'motherhood is the most important achievement in life'. Furthermore, of the 206 who had not planned the current pregnancy, only 31% were on a contraceptive method. The commonest reason given was not being aware of contraceptive methods (37%) with another 27% indicating that there was opposition from the spouse.

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 advices on planning a pregnancy, 60% were provided with a contraceptive method and 50% were advised on adverse outcomes of teenage pregnancy.

Comparisons between pregnant teenagers below and above the legal age of marriage revealed that lower levels of school education to be common among those who were below the legal age of marriage, their spouses and also among parents. Spouses and parents of this group were younger compared to the spouses and parents of the pregnant teenagers who were above 18 years of age. The age of menarche and sexual debut was early among those below the legal age of marriage while reported consensual pre-marital sex was more common. A substantial proportion of those included in the study were under 18 years of age. Poor knowledge on reproductive health issues related to avoiding a pregnancy and on contraceptives and unfavourable attitudes towards use of contraceptives was more prominent among those below legal age of marriage compared to those above the legal age of marriage. The proportion of 'unplanned' pregnancies were higher and use of contraceptives was lower among those <18 years.

Findings from the qualitative study indicated that there was much variation between the three districts in situations/circumstances that lead to teenage marriage and pregnancy. Several social and behavioural factors were seen to influence teenage marriage and pregnancy.

The age of the initiating love relationships among girls was as low as 11-12 year, usually with the partner being older and with limited knowledge about the partner. Mobile phones was seen to be major a contributory factor for initiation of such relationships. Being out of school was seen as a trigger for boys to start intimate relationships with underage girls in low socio-economic situations. The girls usually did not take any advice from peers, siblings or any other relatives before taking such decisions.

Household circumstances leading to early initiation of love relationships included: less parental supervision, the mother working in Middle East for extended periods, heavy alcohol usage of the father leading to domestic violence, severe economic difficulties at home and the girl living with relatives other than own parents. It was seen that less supportive relationships among siblings, less coping abilities, harsh punishments by parents and lack of interest in education from the family also contribute to early intimate relationships and teenage pregnancies.

Majority of the marriages occur without the blessings of the girls' parents in the districts of Anuradhapura and Colombo while in Batticaloa, parents of both sides bless such marriages and a substantial proportion of marriages in rural areas were arranged marriages. The decision to elope was the common form of starting married life in the other two districts. Such decisions

about marriage seem to be not affected by other externalities such as social, economic and health consequences. Teenage marriages of parents, older siblings of both partners were seen in all districts as a notable point. This is more prominent in Batticaloa and rural parts of Anuradhapura district.

It was seen that almost all parents and close relatives tend to accept the reality of teenage marriage and the subsequent pregnancy when it occurs within the family. The initial rejection of the event as stigmatizing and unacceptable clears off within a short time. Thus the manner in which the teenage pregnancy is constructed in the face of society is not straightforward rejection or acceptance**.** It is a complex issue that needs to be viewed in the context of social economic and cultural understanding of the parents and relatives.

A majority of the pregnancies were unplanned and occurred at times that the girl did not expect it to happen. Almost all were scared, when they were told of their pregnancy. Mixed feeling of anxiety, happiness and for some feelings of guilt at being pregnant at a young age and inadequate preparedness to assume greater responsibility in life seems to contribute to halfhearted acceptance of the state of motherhood in a majority of girls.

Though health issues of pregnancy in adolescents are a priority for the health staff it is not considered as important by the pregnant teenagers, their spouses and specially the spouse's relatives. Some of the factors linked to having pregnancy early were: pregnancy being viewed as a strategy to maintain the faithfulness of the wife when the husband is away for a long duration on duty and use of it to stabilize the marriage which is not legally valid**.**

First contact for care in a majority of pregnancy related issues was the Public Health Midwife. However, there is no mechanism for the Public Health Midwife to contact or register the newly married/cohabiting 'underage girls' early. Hence, pre pregnancy counselling or provision of contraceptives was not carried out.

It was seen that teenage pregnancy occurs in a situation where the vulnerability of individual teenage girls to initiate early relationships is high due to reduced parental supervision which is precipitated through a cascade of factors starting from general economic difficulties in the communities.

Recommendations

Though not strictly comparable, all three sources of secondary data on teenage pregnancy has identified that there is a marked inter-district variation in the teenage pregnancy rates. The districts identified to have high rates of teenage pregnancy by the three different sources were mostly consistent. This indicates that the 'intensity' of application of interventions to prevent teenage pregnancy should be district specific.

Furthermore, findings of this study revealed deficiencies and inter-district differences in service provision by Public Health Midwives. In order to rectify those deficiencies, a district based approach is essential.

The risk groups identified in this study for teenage marriage and pregnancy should be targeted in implementing interventions. These include: families with low socio-economic background, lower educational level of parents, less parental supervision, mother working abroad and other unsatisfactory family environments such as heavy alcohol usage of the father leading to domestic violence, severe economic difficulties at home and teenagers living with relatives other than own parents.

Less supportive relationships among siblings, immature or low coping abilities of parents, harsh punishments by parents and lack of interest in education exhibited by the family also contribute to early intimate relationships leading to teenage marriages and pregnancies. The interventions need to address these issues through initiating a programme for inculcating good parenting skills especially in dealing with adolescents.

Strengthening of the life skills programmes in schools targeting early adolescents in order to empower teenagers in making rational decisions is a priority. School authorities need to be aware of the strategies and have the skills necessary to handle situations that arise due to intimate relationships rather than resorting to punitive action when such situations are brought to their notice. Services to help adolescents in rational decision making should be strengthened within the secondary education system in the country.

Care by the Public Health Midwife for adolescents should focus more on families with the identified risk situations. The traditional role of the Public Health Midwife does not include counseling or provision of reproductive health services to unmarried teenagers. However, the role of the Public Health Midwife in improving such services to adolescent females have to be considered, using innovative approaches to access such teenagers who may be at risk of a teenage pregnancy. Existing linkages between the education system and Adolescent Friendly Health Services (AFHS) need to be strengthened.

Role of the Public Health Midwife in providing prenatal counseling and family planning services to teenagers whom they have contact with, has to be improved specially in the rural sector, where completing school education often leads to either a job, marriage or pregnancy. It is necessary to highlight the importance of including the married/cohabiting teenage girls and specifically their partners in the educational programmes that highlight the advantages of avoiding a teenage pregnancy. The unmet need in contraception and other identified deficiencies in services need to be rectified. In the provision of services, there is a necessity to develop need based interventions as appropriate for the districts.

A wide range of social and behavioural factors influencing the teenager, her spouse and the immediate family members have been highlighted in the in-depth study. A key factor identified is the role that can be played by the school and the school environment as a place for intervention.

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