

Original Research



Fertility intentions, current practices and associated factors among co-habiting women in a medical officer of health area in the district of Nuwara Eliya

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Abstract

Background: Identifying the prevailing intentions and practices related to fertility among females is important in promoting pre-pregnancy care service delivery to eligible families.

Objective: To describe the fertility intentions regarding conception; awareness and current practices related to pregnancy preparedness; and factors associated with current fertility practices among fertile women in the district of Nuwara Eliya

Methods: The current study was carried out as a community-based cross-sectional study among 476 cohabiting women in the reproductive age (15-44 years) living in the medical officer of health area, Ambagamuwa. Future and current pregnancy intentions were ascertained. Among the current intenders, their awareness and practices on pre-pregnancy fertility (rubella vaccination, folic acid use, adequate sexual exposure, nutritionally acceptable dietary habits) and factors associated with such practices were assessed. Those not intending a current pregnancy were assessed for family planning practices and associated factors.

Results: Of the women, 300 (63.0%; 95% CI=58.5, 67.4) wanted a pregnancy. Current intention of child bearing was present among 142 (29.8%; 95% CI=25.8, 34.2) women. The awareness on rubella vaccine was observed to be higher (81.0%) compared to the awareness on healthy dietary habits during pre-pregnancy period (62.0%), on the use of folic acid (51.4%) and adequate level of sexual exposure for pregnancy (43.7%). The prevalence of related practices of vaccination with rubella (75.4%), pre-conceptional use of folic acid (12.7%), adequate sexual exposure for pregnancy (42.2%) and adherence to a healthy diet (21.8%) indicated a gap between awareness and practice. Certain socio-demographic factors were related to poor practices. Among those currently not intending to get pregnant, 264 (79.0%) were using a contraceptive method.

Conclusions: The identified modifiable socio-demographic factors should be addressed in planning for improvement in pre-pregnancy care in the local setting.

Key words: fertility, intentions, practices, pregnancy intenders

Introduction

Fertility is a measure of the reproductive performance of women in a community. It indicates the rate of population growth and effect on the population pyramid in the coming years (1). This information is vital for a country to predict the workforce as well as resource demands for the future.

Fertility intentions are often neglected by couples, as pregnancy is considered to be a natural phenomenon which excludes the need for any intervention. However, the adverse effects of poor decision making and planning related to future pregnancies are multi-dimensional across physical, psychological and financial health aspects. These effects become apparent at the individual, family and national levels. Therefore, fertility intentions need planning and execution, in order to obtain a better quality outcome. Making well-informed decisions and adhering to fertility related practices will ensure a well-planned journey from pre-pregnancy stage through a healthy pregnancy to the production of a healthy baby.

Studies on pre-pregnancy care have demonstrated the importance of optimizing the measures taken to improve the wellbeing of foetus. Pre-pregnancy assessments, identification of maternal risk factors, carrying out further investigations and addressing them appear to improve the adherence to desirable practices among females themselves (2-3). Achieving better glycaemic control through pre-pregnancy leisure activities, preventing neural tube defects by the use of folate and multivitamins, and preventing pregnancy associated complications by rubella vaccination provide evidence on the importance of pre-pregnancy care (4-6). Studies have further shown that reduction of unmet need in family planning significantly lowers the maternal mortality rate and abortions (7-8).

Higher level of education is identified to be related to awareness, knowledge and utilization of pre-pregnancy services as well as reducing the level of unmet need in family planning (9-10). Fear of side effects, awareness on available methods, social class, religious and cultural reasons, and other personal factors are also identified (11). Studies conducted particularly in South East Asia have demonstrated that in some parts, the knowledge on contraceptive methods is limited in the areas of duration of protection, benefits of the methods and how to discontinue with the aim of returning to fertility (12-13). The aim of this study

was to describe the fertility intentions, awareness and practices related to pre-pregnancy preparedness, and to determine the factors associated with inappropriate practices among the cohabiting females of reproductive age in a rural area in the district of Nuwara Eliya.

Methods

This was a community-based cross-sectional study carried out in Ambagamuwa Medical Officer of Health (MOH) area, which belongs to the district of Nuwara Eliya. The study population included cohabiting females aged 15-44 years who were permanently residing in the area. Cohabiting females comprised all the married females and those together in sexual relationships. Females who were sterile, have had premature menopause, having a spouse who had undergone sterilization, and pregnant or within six weeks of the postpartum period were excluded from the study. The 45-49 year old women were excluded as the age-specific fertility rate in this group had been static over the years. The required sample size was calculated using the appropriate formula for descriptive studies (14) for 5% significance level and 0.05 level of precision. Since there were no comprehensive local data on 'desire to limit childbearing', 50% was taken as its estimated prevalence. After accounting for design effect, the final sample size was 500. A two-stage cluster sampling method was used. Out of the 37 public health midwife (PHM) areas, 25 were selected randomly, from each of which 20 eligible women were selected using the eligible family register.

Data were collected using a pre-tested interviewer-administered questionnaire, which was formulated after a comprehensive literature review and a series of meetings held with a group of content experts. The questionnaire was pre-tested in Kotagala MOH area within the same district. It contained the following sections: a) Socio-demographic factors (age, ethnicity, religion, education level, type of family and monthly family income), b) Fertility intention for future and current pregnancies, c) Awareness and practices related to the current pre-pregnancy preparedness (rubella vaccination, pre-conceptional folic acid use, adequate level of sexual exposure of at least three days a week and presence of at least three of the six desirable dietary habits), d) Factors associated with pre-pregnancy practices (distance to health care centre, PHM contact during previous three months, experience of a previous pregnancy, and having a need for better information on pre-pregnancy care and services, and

e) Use of contraceptive methods among pregnancy non-intenders and associated factors with contraceptive use (distance to health care centre, PHM contact during previous three months, heard of family planning messages during previous three months, previous use of contraceptives, ever discussed with partner on family planning, discussed with partner on current family planning and need more information on family planning). Sections C and D were administered only to females intending a current pregnancy. Section E was administered only to females not intending a current pregnancy. Also, the pre-pregnancy check list ('Nawadivisuwa Piriksumpatha') prepared by the Family Health Bureau, Sri Lanka was perused. Data collection was done by trained research assistants having bi-linguistic ability for Sinhala and Tamil languages. This process was closely supervised by the principal investigator for shortcomings and continuous feedback.

The data were analysed using the Statistical Package for Social Sciences (SPSS) version 16 software. Pregnancy intentions and certain practices related to the current intention were described as percentages with 95% confidence interval (CI). The associated factors for each of the current practices were cross-tabulated with socio-demographic and other possible correlates, and the factors associated with inappropriate practices were assessed using chi-squared test.

Results

Out of the estimated sample size of 500, 476 individuals responded, giving a response rate of 95.2%. The majority of participants (72.3%) belonged to 20-34 year age group. The main ethnicity identified was Tamil (46.2%) while the main religion was Hindu (43.9%). Nearly half of the respondents were employed, while 142 (29.8%) had an income less than Rs. 10,000.

Of the women, 300 (63.0%; 95% CI=58.5, 67.4) wanted a pregnancy; 155 (32.6%; 95% CI=28.4, 37.0) did not want; and 21 (4.4%; 95% CI=2.8, 6.7) were uncertain about it. Of them, 142 (29.8%; 95% CI=25.8, 34.2) were currently planning for a pregnancy. Among these current intenders (n=142), the pre-pregnancy preparedness was assessed (Table 1). Awareness on rubella vaccination prior to pregnancy was noted in 115 (81.0%), while 107 (75.4%) had already been vaccinated for rubella. Awareness on the use of pre-conception folic acid preparations was present among

73 (51.4%) women, but only 18 (12.7%) women were using it. Also, 62 (43.7%) were aware of the adequate sexual exposure needed to get pregnant, while 60 (42.2%) also experienced the same. The awareness on dietary habits was present in 88 (62.0%) women, but only 31 (21.8%) were adhering to nutritionally acceptable dietary habits.

Table 1. Pre-pregnancy preparedness among the current intenders of pregnancy (N=142)

Factor	No. (%)
Awareness on rubella	115 (81.0)
Vaccination with rubella	107 (75.4)
Awareness on pre-conception folic acid use	73 (51.4)
Use of folic acid	18 (12.7)
Awareness on adequate level of sexual exposure	62 (43.7)
Adequate sexual exposure	60 (42.2)
Awareness on desirable dietary habits	88 (62.0)
Acceptable dietary habits	31 (21.8)

Being non-Buddhist ($p=0.02$) and having a past pregnancy ($p=0.02$) were significantly associated with being vaccinated for rubella (Table 2). Higher educational level ($p=0.01$) and having a need for better health care services ($p=0.04$) were significantly associated with the use of pre-conceptional folic acid. Being non-Sinhalese ($p=0.04$), past pregnancy ($p=0.01$) and having a need for better pre-pregnancy health care services ($p<0.001$) were significantly associated with adequate sexual exposure. Being Sinhalese ($p<0.001$), Buddhist ($p<0.001$), higher education ($p<0.001$), recent PHM contact ($p=0.002$), past pregnancy ($p=0.002$), and having a need for more information on pre-pregnancy care ($p=0.004$) and services ($p=0.005$) were significantly associated with adherence to nutritionally acceptable dietary habits.

There were 334 women who were not intending to get pregnant currently. Of them, 264 (79.0%) were using a contraceptive method. Younger age ($p<0.001$), being non-Sinhalese ($p<0.001$), non-Buddhist ($p<0.001$), lower education ($p<0.001$), receiving family planning messages during last six months ($p<0.001$), use of contraceptives before ($p<0.001$), and having ever discussed ($p=0.02$) and currently discussed ($p<0.001$) family planning with partner were significantly associated with current contraceptive use (Table 3).

Table 2. Socio-demographic factors associated with pre-pregnancy preparedness practices among current intenders of pregnancy (N=142)

Characteristic	Vaccinated for rubella ¹ (n=107)	Using folic acid ¹ (n=18)	Adequate sexual exposure ¹ (n=60)	Desirable dietary habits ¹ (n=31)
Age (years)				
15-34	94 (87.9)	15 (83.3)	56 (93.3)	26 (83.9)
35-44	13 (12.1)	3 (16.7)	6.7 (4)	5 (16.1)
Ethnicity				
Sinhala	45 (42.1)	9 (50.0)	18 (30.0)	22 (71.0)
Tamil / Other	62 (57.9)	9 (50.0)	42 (70.0)	9 (29.0)
Religion				
Buddhism	44 (41.1)	7 (38.9)	16 (26.7)	19 (61.3)
Hindu /Other	63 (58.9)	11 (61.1)	44 (73.3)	12 (38.7)
Highest education level²				
Up to Grade 10	66 (61.7)	7 (38.9)	40 (66.7)	10 (32.3)
GCE O/Level and above	41 (38.3)	11 (61.1)	20 (33.3)	21 (67.7)
Type of family				
Extended	70 (65.4)	6 (33.3)	25 (41.7)	17 (54.9)
Nuclear	37 (34.6)	12 (66.7)	35 (58.3)	14 (45.1)
Monthly family income				
≤ Rs. 10,000/=	34 (31.8)	8 (44.4)	34 (56.7)	13 (41.9)
> Rs. 10,000/=	73 (68.2)	10 (55.6)	26 (43.3)	18 (58.1)
Distance to health care centre				
< 5km	55 (51.4)	12 (66.7)	33 (55.0)	13 (41.9)
≥ 5km	52 (48.6)	6 (33.3)	27 (45.0)	18 (58.1)
PHM contact during previous three months				
Yes	38 (35.5)	7 (38.9)	18 (30.0)	17 (54.8)
No	69 (64.5)	11 (61.1)	42 (70.0)	14 (45.2)
Experienced pregnancy before				
Yes	86 (80.4)	15 (83.3)	39 (65.0)	(26) 83.9
No	21 (19.6)	3 (16.7)	21 (35.0)	5 (16.1)
Need more information on pre-pregnancy care				
Yes	83 (77.6)	12 (66.7)	50 (83.3)	27 (87.1)
No	24 (22.4)	6 (33.3)	10 (16.7)	4 (12.9)
Need more pre-pregnancy health care services				
Yes	78 (72.9)	17 (94.4)	54 (90.0)	29 (93.5)
No	29 (27.1)	1 (5.6)	6 (10.0)	2 (6.5)

¹Bold lettering indicates significant associations at 5% significance level.

²General Certificate of Education (Ordinary level)

Table 3. Contraceptive use among non-current pregnancy intenders according to socio-demographic factors (N=264)

Characteristic	Contraceptive use No. (%)	p value
Age (years)		
15-34	218 (82.6)	<0.001
35-44	46 (17.4)	
Ethnicity		
Sinhala	126 (47.7)	<0.001
Tamil / Other	138 (52.3)	
Religion		
Buddhism	125 (47.3)	<0.001
Hindu / Other	139 (52.7)	
Highest education level		
Up to grade 10	133 (50.4)	<0.001
GCE O/L and above	131 (49.6)	
Type of family		
Extended	117 (44.3)	0.23
Nuclear	147 (55.7)	
Monthly family income		
Less than 10,000/=	78 (29.5)	0.06
More than 10,000/=	186 (70.5)	
Distance to health care centre		
Less than 5km	190 (72.0)	0.09
More than 5km	74 (18.0)	
PHM contact during last 3months		
Yes	66 (25.0)	0.26
No	198 (75.0)	
Heard of family planning messages last six months		
Yes	149 (56.4)	<0.001
No	115 (43.6)	
Previous use of contraceptives		
Yes	217 (82.2)	<0.001
No	47 (17.8)	
Ever discussed with partner on family planning		
Yes	206 (78.0)	0.02
No	58 (22.0)	
Discussed with partner on current family planning		
Yes	179 (67.8)	<0.001
No	85 (32.2)	
Need more information on family planning		
Yes	208 (78.8)	0.45
No	56 (21.2)	

Discussion

In the current study, 29.8% of the females were having an intention for a current pregnancy. According to the latest Demographic and Health Survey 2016, over 61% of the currently married women do not want to have more children or are already sterilized, while only 30% want to have another child. However, only 16% wanted to have a child soon (15). This higher fertility intention noted in the study can be explained by the 45-49 year old females whose fertility is expected to be much less and sterilized females, being excluded (16). On the other hand, this could be a true indication of higher fertility commonly seen among estate females from Nuwara Eliya district (17).

Among the current pregnancy intenders, the awareness on rubella vaccination was 81%. The vaccination coverage (75.4%) among them was lower than the national coverage of 92% (18). However, the national figure represents only registered pregnant mothers, whereas in the current study, all the females after marriage in the pre-pregnancy stage were included, during which the vaccination usually takes place. Even though the awareness and practice of pre-conceptional folic acid use were low in this study, in comparison to certain other countries, the figures were acceptable (19).

Being vaccinated for rubella was significantly higher among non-Buddhists and previously pregnant women. The association with religion may have resulted from varying religious views and the environment. The association with previous pregnancy may be due to the commitment to vaccination before starting a pregnancy or being vaccinated during the pregnancy care.

The higher educational level ($p=0.01$) and a need for better health care services ($p=0.04$) were significantly associated with the use of pre-conception folic acid. The increased level of education could be associated with increased awareness and attitudes towards health measures as well as improved knowledge on available service utilization. This is similar to the findings of a research conducted in Israel (9). The demand for more health care services was seen among folic acid users, which indicates their alertness towards the utilization of health care resources including pre-pregnancy services.

The proportion of Tamils with adequate sexual exposure was higher than in other ethnicities (52.9%).

This could be explained by their cultural and social behaviour especially in the estate sector. Previous experience of pregnancy ($p=0.02$) was associated with adequate sexual exposure. This indicates the socio-cultural influence on sexual practices, despite the roles and responsibilities added over time.

Though poor dietary habits were observed among all ethnic groups and religions, it was more prominently seen among the Tamils and Hindus. This could be explained by the dietary habits being influenced by religious beliefs and cultural habits in the estate sector. However, understandably, higher education level had a positive association with desired dietary habits by improving the respondents' capacity towards healthy behaviour. The observed association between lesser number of PHM visits and poor dietary habits could be due to lack of reinforcement by a health care worker for desirable dietary habits. The desirable dietary habits also appear to be diminishing with previous pregnancy. This could be due to the lack of commitment to another pregnancy and other prevailing socio-cultural effects in the family environment.

When considering the different age groups, a reduced prevalence of contraceptive use was seen among 35-44 year age group. This could be due to the lack of perceived risk of pregnancy with increasing age and the infrequent and inconsistent sexual habits.

Among the ethnicities and religions, Sinhalese and Buddhists reported the highest rates for contraceptive use. This could be due to the socio cultural and religious effects on contraceptive use. As in other instances, higher education level has significantly increased the contraceptive usage through the improved awareness and capacity among the females. The exposure to family planning messages during previous six months was associated with increased use probably by reinforcing the females for contraceptive use. The importance of partner's role in family planning is attenuated by the association between the contraceptive use and having ever or currently discussed on family planning with the partner. The previous use of contraceptives was associated with current contraceptive use probably through enabling the females to identify the methods suitable for them and the available service providers through their previous exposures.

Conclusions and Recommendations

There is room for further improvement in the

awareness among females currently on pregnancy intention and related practices. Also, a gap was observed on the awareness to practise among major practices related with pregnancy intention. Certain socio-cultural factors were observed to be related with these inappropriate practices which can be addressed through targeted interventions. The programmes addressing pre-pregnancy care and family planning should be further strengthened. They should target fertile couples in the community to educate and enable them to arrive at healthy decisions regarding fertility intentions. The couples should be empowered to make healthy choices by providing them with knowledge and awareness on benefits and risks of related practices during this period. The continuation of care beyond postpartum period to the mother should be strengthened.

Public health implications

The programmes addressing pre-pregnancy care and family planning should be further strengthened within the public health care delivery system. The prevailing pre-pregnancy care package should be strengthened to increase the coverage of fertile couples. The pathways need to be identified to increase the coverage, by addressing the key determinants in service utilization. Apart from addressing newly married couples, continuum of care needs to be strengthened beyond postpartum period for pregnant females. This service provision has to be applied throughout their fertile years with active involvement of the male partner.

Author Declarations

Competing interests: No competing interests declared by the authors.

Ethics approval and consent to participate: Written informed consent was obtained from women before conducting the interviews. The study was approved by the Ethics Review Committee of the Faculty of Medicine, University of Colombo (ERC number EC-11-086).

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Author contribution: OBWR engaged in proposal writing, obtaining ethics approval, organizing consultative meetings, supervision of data collection, data entry, analysis and article writing. NL identified the resources for consultative meetings, gave inputs in initial drafting of questionnaires and carried out the supervisory role.

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