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Nutritional Status and Reproductive Health of Young Rural Adult Women in Krishnagiri District

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Abstract

Child marriage is still wide spread in India. Early marriage exploits the physical and mental well being of women. A cross sectional study was conducted in Bargur Taluk of Krishnagiri district in Tamil Nadu to compare the nutritional status and reproductive health of 18 to 25 years old women who were married before 18 years and the women of same age group who were married after 18 years. Totally 150 married women were selected by purposive sampling method to study the prevalence of early marriage and their socio economic status in the selected area. Nutritional status and reproductive health was assessed in a sub sample of 100. Among the 150 women, 37.33 per cent were married before 18 years and they were classified as Group-I. Others (62.67%) were classified as Group-II. In Group-I, majority (44.6%) had completed secondary education and 51.78 per cent belonged to lower income group. In Group-II, 48.92 per cent had completed higher secondary education or more and 50 per cent belonged to economically weaker section. Though there was no difference in the mean height, there was a significant difference in the mean weight between the groups. The BMI was normal in 48.5 per cent of women in group-I and 44.64 per cent of the women in group-II. Prevalence of malnutrition was noted more in group-I (22.86%) than in group-II (16.92%). The hemoglobin level was also found to be significantly lower in group-I (9.71gm/dl) than group-II (10.2gm/dl). The average age at menarche was same in both the groups. Age at marriage of women influenced the age at birth of the first and the last child. Occurrence of abortion and still birth was reported higher among the women in group-I (20% and 5.71% respectively) than the women in group-II (12.3% and 3% respectively). High RHI score was obtained by 72.31 per cent of women in group-II whereas only 54.29 per cent of women in group-I could get this. It can be concluded that early age at marriage negatively influences educational attainment, nutritional status and reproductive health of women.

Keywords: Age at marriage, reproductive health of women, nutritional status of women.

Introduction

Child marriage-marrying before the legal age at 18 years for girls-is still wide spread in India (UNICEF, 2012). Many studies have revealed that early marriage exploits the physical and mental well being of women. Though early marriage appears to be a fascinating factor for teenagers because of the love and good care which they assume to get, they do not consider the family burden which they have to shoulder at a very young age (Ahmed *et al*, 2013). Ahmed *et al* (2014) quoted that when compared to the females who are married after the age of 20 years, the girls who are married during their adolescence suffer because of their low physiological development, lack of awareness and low self esteem. All these factors lead to the high risk of maternal mortality and morbidity.

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Objective

The present study was conducted to understand the effect of age at marriage on the reproductive health of 18 to 25 years old women living in Bargur Taluk of Krishnagiri district in Tamil Nadu.

Materials and methods

Among the 7 revenue taluks in Krishnagiri district, the newly formed Bargur Taluk was selected to conduct this study. According to National Family Health Survey (NFHS)-4 (2015-16), District Fact Sheet, Krishnagiri, Tamil Nadu, 23.9 per cent of the 20 to 24 years old women living in the rural area were married before 18 years. This percentage is more than the percentage of women in Tamil Nadu who were married before 18 years of age (21.5%) reported in NFHS-3 (2005-06) and 1.5 times of the percentage (15.7%) reported in NFHS-4 for Tamil Nadu and 1.3 times of the percentage (18.3%) reported for the rural areas in Tamil Nadu in NFHS-4. It was also noted that the percentage of women aged 15 to 19 years who were already mothers or pregnant at the time of the survey in rural areas of

Krishnagiri district was 1.4 times (8.9%) that of the state's percentage of rural areas (6.3%). As per the report of the Directorate of Census Operations, Tamil Nadu (2011), Bargur which was holding a panchayath union status during 2011, had the highest number of total female population (94,155) among all the panchayath unions in Krishnagiri district though it contained third highest number of villages.

One hundred and fifty 18 to 25 years old women were selected to conduct this study using purposive sampling method because this age group would reflect the current trend in the age of marriage of girls prevailing in the selected area (Raj *et al*, 2010). Data from the selected women were collected by face to face interview method using a semi structured schedule. Data regarding general information and socio economic status were collected from all the selected women. The nutritional status and reproductive health of the women were studied with 100 sub samples. The nutritional status was assessed using body mass index (BMI) and haemoglobin content which were determined using standard methods (Gibson R.S., 1990). The Reproductive Health Index (RHI) of the women was computed using the RHI scale developed by Prakash *et al* (2011).

Results and discussion

The selected women (N=150) were first classified into two groups namely Group-I consisting of women who were married before 18 years of age and Group-II consisting of women who were married after 18 years of age. Group-I consisted of 56 (37.3%) women and Group-II consisted of 94 (62.7%) women. Santhya *et al* (2010) observed that 63 per cent of the women had married before the legal age at marriage for females in India.

Socio economic status

The socio economic status of the selected women is given in Table-I. Most of the selected women (47.33%) were 22 to 24 years old. Secondary level of education was obtained by 35.33 per cent of the selected women. Among the women in Group-I, 23.2 per cent were illiterates or studied up to primary level. Majority (44.6%) of them had obtained secondary education. But in Group-II, 27.65 per cent women had completed higher education and 21.27 per cent had completed higher secondary school level. It was noted that the prevalence of early marriage was more in women with low education attainment and this is supported by Santhya *et al* (2010).

Table I. Socio economic status of the selected women

S.No.	Criteria	Classification	Group-I (n=56)	Group-II (n=94)	Total (N=150)
1.	Age (Years)	18-20	19 (33.9)	10 (10.64)	29 (19.35)
		20-22	9 (16.1)	31 (32.97)	40 (26.66)
		22-24	25 (44.6)	46 (48.95)	71 (47.33)
		> 24	3 (5.4)	7 (7.44)	10 (6.66)
2.	Education obtained	Illiterate	7 (12.5)	9 (9.57)	16 (10.64)
		Primary	6 (10.7)	11 (11.73)	17 (11.34)
		Secondary	25 (44.6)	28 (29.78)	53 (35.33)
		Higher secondary	9 (16.1)	20 (21.27)	29 (19.33)
		Higher education	9 (16.1)	26 (27.65)	35 (23.33)
3.	Occupation	Home maker	50 (89.28)	87 (92.56)	137 (91.33)
		Student	0	3 (3.19)	3 (2)
		Farm labourer	4 (7.15)	0	4 (2.67)
		Other works	2 (3.57)	4 (4.25)	6 (4)
4.	Monthly income*	Economically weaker section (≤ Rs. 3 L/Year)	56 (100)	94 (100)	150 (100)
		Lower income group (Rs. 3-6 L/Year)	0	0	0
		Middle income group	0	0	0
		Higher income group	0	0	0

*(HUDCO, 2016))
(Number in parenthesis indicate the percentage)

The economic status of the total selected women indicates that 100 per cent of them belonged to economically weaker section. None of them were found to be in lower income group or middle income group or higher income group as per HUDCO (2016). Prakash *et al* (2011) suggested that women who were marrying at a

younger age were mostly from poor socio economic backgrounds. It was also noted that 92.56 per cent of the women in Group-II were home makers and only 4.25 per cent of them were contributing to the total family income. In Group-I more than 10 percent (10.72%) of the women were contributing to the family income.

Nutritional status

The nutritional status of the randomly selected 100 sub samples is presented in Table-II. It was observed that the average height (cm) of the women in Group-I was 147.15 (±0.051) and that of the women in Group-II was 146.38 (±0.06). The average weight (kg) of the women in Group-I was 45.58 (±6.26) and that of Group-II was 48.79 (±8.49). Though there was no significant difference was observed in average height between the groups, the average weight was significantly different between the two groups. The BMI of 48.57 per cent of the women in Group-I and 44.64 per cent of the women in Group-II was normal. In Group-I, 42.86 per cent of the women was under nourished and in Group-II, 33.83 per cent were under nourished. Low nutritional status was reported by Prakash *et* al (2011) in 40 per cent of the early married women. Over weight was observed in 20 per cent of the women in Group-II and 8.57 per cent of the women in Group-I. Class-I obesity was also seen in one respondent in Group-II. No significant difference was observed between the averages of the BMI of the two groups. The hemoglobin level of the selected women revealed that only 26.15 per cent of Group-I and 14. 28 per cent of Group-II was normal. Mild anemia was seen in 62.86 per cent of Group-I and 60 per cent of Group-II. Occurrence of moderate anemia was more in Group-I (62.86%) than Group-II (60%). This prevalence is more than the prevalence (20%) observed by Prakash *et* al (2011). A significant difference was observed in the mean hemoglobin (gm/dl) level of Group-I (9.71±1.18) and Group-II (10.2±1.19).

Table II. Nutritional status of the selected women (N=100)

S.No.	Criteria	Classification	Group-I (n=35)	Group-II (n=65)
1.	Mean height (cm)		147.15(±0.051)	146.38(±0.06)
2.	Mean weight (kg)		45.58(±6.26)	48.79(±8.49)
3.	Body Mass Index*	Grade-III-Severe malnutrition (<16kg/m^2)	0	0
		Grade-II-Moderate malnutrition (16-17kg/m^2)	1 (2.86)	3 (4.61)
		Grade-I-Mild malnutrition (17-18.5kg/m^2)	6 (17.14)	8 (12.13)
		Low weight (18.5-20kg/m^2)	8 (22.86)	11 (16.92)
		Normal (20-25kg/m^2)	17 (48.57)	29 (44.64)
		Over weight (25-29.9kg/$m^{2)}$	3 (8.57)	13 (20)
		Obesity (≥30kg/m^2)	0	1 (1.53)
4.	Hemoglobin level#	Severe anemia (≤7g/dl)	0	0
		Moderate anemia (7-9g/dl)	8 (22.86)	9 (13.85)
		Mild anemia (9-11g/dl)	22 (62.86)	39 (60)
		Normal (>11g/dl)	5 (14.28)	17 (26.15)

* WHO (2000) classification of BMI
# WHO (2001) classification of hemoglobin
(Number in parenthesis indicate the percentage)

Reproductive health

The reproductive history of the 100 randomly selected sub samples is presented in Table-III. The mean age at menarche of women in both the groups was not different and it was 14.2 years for Group-I and 14.1 years for Group-II. The mean age at marriage for the women in Group-I was 16.4 years and that of the women in Group-II was 19.2 years. About 86.15 per cent of the women in Group-II got married between 18 and 20 years of age. Among them 25 women were married at 18 years

and 20 women were married at 19 years. The influence of age at marriage was clearly seen in the mean age of the mothers at first child birth and last child birth (Prakash *et al*, 2011). The mean age at first child birth for the women in Group-I was 18.1 years and that of the women in Group-II was 20.4 years. The mean age at last child birth was 20 years and 21.3 years for the women in Group-I and Group-II respectively. In Group-I, 68.57 per cent of the women had their last child birth between 18 and 20 years of age. In Group-II, 52.31 per cent of the women had their last child birth between 21 and 23 years age.

Table III. Reproductive history of selected women

S.No.	Criteria	Classification	Group-I (n=35)	Group-II (n=65)
1.	Age at menarche	13	6(17.14)	10(15.38)
		14	20(57.14)	36(55.38)
		15	8(23)	15(23.09)
		16	1(2.86)	1(1.53)
		17	0	3(4.62)
2.	Age at marriage	<18	35(100)	0
		18-20	0	56(86.15)
		21-23	0	8(12.32)
		≥24	0	1(1.53)
3.	Number of children	1	7(20)	40(61.54
		2	24(68.57)	23(35.38)
		3	4(11.43)	2(3.08)
4.	Type of delivery	Normal	29(82.86)	47(72.31)
		Caesarian	6(17.14)	18(27.69)
5.	RHI score	Poor (0-5)	10(28.57)	4(6.15)
		Average (6-7)	19(54.29)	14(21.54)
		High (8-9)	6(17.14)	47(72.31)

(Number in parenthesis indicate the percentage)

Mother's age at marriage influenced the number of children they had. This is evident from the significant difference between the average numbers of children of the mothers in Group-I (1.89±0.56) and Group-II (1.4±0.55). Raj *et al* (2010) documented the mean number of children of women who married earlier was 1.5 and that of women married after 18 years was 1.3. In Group-I, 68.57 per cent of the women had two children and in Group-II, 61.54 per cent of the women had one child at the time of data collection. It was noted that 27.69 per cent of the last deliveries were by caesarian section in Group-II mothers and it was only 17.14 per cent in Group-I mothers. Rest of the mothers had reported to have normal delivery. None of the selected women had reported the use of any of the contraceptive methods. Sanneving *et al* (2013) also quoted the low usage of contraceptives in rural Tamil Nadu. Complications of pregnancy such as anemia and edema were reported to be present during first pregnancy in 47 per cent of the women in Group-I and 65.71 per cent of the women in Group-II. Other women did not report the presence of any other complications during first pregnancy. Though the occurrence of pregnancy complications was less in women in Group-I, the occurrence of abortions (20%) and still births (5.71%) was higher in Group-I than that of Group-II (12.3% and 3% respectively) and this is higher than the prevalence of abortions and still birth observed by Santhya *et al* (2010) (17% miscarriage) and Prakash *et al* (2011) (18% abortions and 2% still births).

Reproductive Health Index score was average for 54.29 per cent of the women and poor for 28.57 per cent of the women in Group-I whereas 72.31 per cent of the mothers in Group-II obtained high RHI score. There was a significant difference in the mean RHI score of the women in Group-I (6.44±1.4) and Group-II (8.1±1045). This indicates that age of the women at marriage significantly affects their reproductive health (Prakash *et al*, 2011).

Conclusion and recommendation

It can be concluded that early age at marriage negatively affects the education attainment, nutritional status and reproductive health of women. It is recommended to create awareness about the negative effects of early marriage among the adolescent girls living in the selected area who are going to be the victims in near future so that their health and the health of the future generation may be protected.

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