

Original Research Article

Impact of child marriage on nutritional status of women from suburban and urban areas of West Bengal

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ABSTRACT

Background: Child marriage is a substantial barrier to social and economic development of a country and a primary concern for women's health. In West Bengal, the practice of early marriage is still running especially in Muslim community. The present study was aimed to find out the impact of child marriage on nutritional status of mother in terms of BMI.

Methods: 117 Muslim women from both North and South 24 Parganas districts of West Bengal were studied. All of them were from economically lower middle class group. Height, weight, age, age at marriage, age at 1st child birth, number of children, family income and other information were recorded.

Results: During the study, the average age of 117 Muslim women was 28.4±3.7 years with a range of 21-41. Average age was 18.0±1.9 years when the Muslim women got married. 83.6% women who got married in childhood were in underweight category of which 15.8% were in severe thinness category. But 86.9% women who got married after 18 year were in normal weight category. Only 5.3% women of this group were in underweight category.

Conclusions: Thinness of the mother might be due to marriage before 18 year. Thus from the above study it could be concluded that child marriage had a negative impact on mother's nutritional status in terms of BMI.

Keywords: BMI, Child marriage, Muslim women, Nutritional status

INTRODUCTION

Child marriage- defined by UNICEF as marriage before 18 years of age- is a reality for more than 60 million women worldwide. Child marriage has become a substantial barrier to social and economic development of India, and a primary concern for women's health. In India different studies revealed that 44.5% of women aged in between 20 to 24 year got married before 18 years, 22.6% were before 16 years, and 2.6% got married before age 13.¹⁻⁴ Studies also revealed that most of the child marriage was significantly associated with non contraceptive conjugation till first childbirth, high fertility (three or

more births), repeat childbirth in less than 24 months, multiple unwanted pregnancies and abortion.¹

Though the child marriage issue drew the attention of Bengali social reformers in 19th century, but the practice is still running silently in West Bengal especially in Bengali Muslim community. In West Bengal though the number of child marriages are reducing due to education and counselling by different social organizations but the practice is still prevalent in poor and lower middle class families especially in Muslim communities in urban, suburban and rural areas. In recent time reports from different sources along with census show that there has been a rise in incidences of early marriage in West

Bengal which was 37.2% of total marriage in between 1996 to 2001, 53.3% in the year 2005-06 according to NFHS.⁵ In the year 2007-08, it was 54.7% according to the reports of District Level Household and Facility Survey-3 2008 and UNICEF 2009.⁷ But the number reduced to 40.7% in the year 2015-16.⁸

Child marriage causes physical, psychological and intellectual impact on the child bride. It has an adverse effect on girl's health along with increased risk of sexually transmitted diseases, cervical cancer, diabetics, heart disease.^{1,7,9-13} These adverse effects in turn have an impact on the nutritional status. Most of the previous studies on child bride across the world were focused on social problems.¹⁴⁻¹⁹ And very few works had been done on nutritional status of child bride who gave birth to a child in early age.⁴ In India Goli et al worked on Child bride in Andhrapradesh and Bihar.⁴ No work had been found on Bengali Muslim women in West Bengal. Some works had been done on Bengali Muslim women for their nutritional status irrespective of marriage age but works were not available on nutritional status.²⁰⁻²² Thus, the present study was aimed to find out the impact of child marriage on nutritional status of Bengali Muslim child bride.

METHODS

Study area and subjects

Married Muslim women from urban settlement of North 24 Paragana (Kamarhati) and suburban and rural settlement of South 24 Paragana (Minakha and Basanti villages) of West Bengal, India were studied. The study participants consist of the married women who fall roughly between the age group of 20 to 45 to satisfy the objective of the study. 117 married women were studied from different families with similar economic status but with different professions like cooking at home, household works, cultivation and fishing.

Study design

It was a cross-sectional and observational study. The subjects were selected as and when available. Participants having any physical deformity or recent illness or pregnant were excluded from the study. The sample size was calculated by the technique x/n^{th} , where n is the sample size and x is the population size (child bride population size of selected areas). Every x/n^{th} individual was selected for the study.

Research ethics

As the study deals with human participants, the research proposal was submitted for ethical clearance to the respective Governmental authority and consent were collected from the participant and their families prior to the actual commencement of the study.

Variables

Anthropometric measurements like height and weight were taken by internationally accredited Anthropometrist (ISAK) according to the method recommended by International Society for the Advancement of Kinanthropometry (ISAK).²³ Chronological ages in year were recorded from the participants' legal ID cards, birth certificate and health cards.

Body mass index

Body mass index (BMI) was calculated using the equation where $BMI = \text{Weight (kg)} / \text{Height (m)}^2$. Category of Nutritional status was determined using WHO guideline based on BMI (Table 1).²⁴

Table 1: Classification of adult BMI.

	Classification	BMI (kg/m ²)
Underweight range	Underweight	<18.5
	Severe thinness	<16.00
	Moderate thinness	16.00-16.99
	Mild thinness	17.00-18.49
Normal range		18.5-24.99
Overweight range	Overweight	>25.00
	Pre-obese	25.00-29.99
	Obese	>30
	Obese class I	30-34.99
	Obese class II	35-37.99

Socio-economic status

Education, occupation, family income, age at marriage, age at 1st childbirth etc. were collected by questioner. Updated Kuppaswamy scale 25 was used for determining socio-economic status.^{26,27}

Statistical analysis

Necessary statistical analysis was done using MS Excel.

RESULTS

During the study, the average age of 117 Muslim women was 28.4 ± 3.7 years with a range of 21-41. Average age was 18.0 ± 1.9 years when the Muslim women got married. 83.6% women who got married in childhood were in underweight category of which 15.8% were in severe thinness category. But 86.9% women who got married after 18 year were in normal weight category. When age at marriage was correlated with BMI, a moderate positive significant co-relationship of 0.52 ($p < 0.05$) was observed in the present study. But a very poor negative correlation ($r = -0.25$) was observed between the number of child-birth by the child bride after marriage and BMI. Similarly, a positive weak relationship was observed when the age at first child birth was correlated with BMI ($r = 0.48$).

Table 2: Average age, average age at marriage, number of children, height, weight and BMI of 117 Bengali Muslim women.

N=117	Age (yr)	Age at marriage (yr)	Age at 1 st child birth (yr)	Number of child	Height (cm)	Weight (kg)	BMI kg/m ²
Mean	28.4	18.0	19.6	3	152.1	43.7	18.8
SD	3.7	1.9	2.1	1	6.1	6.9	3.1
Min	21	15	16	1	138.1	30	14.2
Max	41	26	27	6	168.0	77	32.7

SD=Standard Deviation, Min= Minimum value, Max=Maximum value

Table 3: Age at First child birth among 117 Bengali Muslim women

Age at 1st child birth (years)	16	17	18	19	20	21	22	23	24	27
Number of women	1	10	41	17	6	21	12	5	2	2
% of women	0.9	8.5	35.1	14.5	5.1	17.9	10.3	4.3	1.7	1.7

Table 4: Nutritional status of 117 Bengali Muslim women at different marriage age.

Age at marriage (years)	n	Nutritional status based on BMI							
		Underweight		Normal weight		Pre-obese		Obese class I	
		n	Percent	n	Percent	n	Percent	n	Percent
Over 18	38	2	5.3	33	86.8	1	2.6	2	5.3
18 or below 18	79	66	83.6	13	16.4	0	0	0	0
All ages	117	68	58.1	46	39.3	1	0.9	2	1.7

DISCUSSION

Child marriage is a common practice in Muslim communities especially in poor families in urban, suburban and rural areas of Bengal where children married off before 18 year prior to attaining physical maturity.² In the present study, 117 Muslim women were studied from urban, suburban and rural areas of West Bengal who belongs to either upper lower or lower Socio-economic class. The educational levels of all studied Muslim women were either uneducated or primary school level. Average age of the Muslim women of the present study was 28.4±37 with a range between 21 and 41 year. Average age at marriage was 18±1.9 years where the lowest age was 15 year and highest age 26 year (Table 2). 67.5% studied Muslim women were child when they got married and rest got married after 18 years. 17.9% girls got married at 18 year of age, 31.6% girls got married at 17 year of age, 17.1% girls got married at 16 year of age and only one child got married at 15 years of age. Thus, 67.5% of the studied Muslim women were child when they got married and rest 32.5% was adult when they got married. 67.5% is very close to 65.3% women from all religion married before 18 year in West Bengal in the year 2005-2006.²⁸ Average age of mother at first child birth was 19.6±2.1 years but 35% of surveyed women gave birth 1st child at 18 and 9.4% women gave birth before 18 year. 19.6 % women gave birth in between 19 and 20 year whereas 35.9% women gave birth in between 21 and 27 year. Hence 44.4% women gave birth when they were child and 19.6% women when they just

reached the adulthood (Table 2-4). Very similar value was observed by Goli et al where 42.7% women gave 1st birth at when age was below 18 years.⁴

Body mass index (BMI) is a measure for indicating nutritional status of an adult.²⁴ In the present study average BMI for the whole studied population was 18.8±3.1 kg/m² with a range of 14.2-31.7 kg/m² (Table 1). Average BMI of Muslim women married in childhood in present study came down to 17.6±2 kg/m² with a range of 14.2-24 kg/m² whereas that of women married after 18 year of age was 20.2±1.6 kg/m² in average with a range between 17.3-32.7 kg/m². So women married at or below 18 year of age were underweight category in average whereas women married in adulthood were normal weight category in average.

83.5% of total women who married in childhood were underweight with mild, moderate and severe thinness and only 16.5% were in normal weight category. A large number of women who married in childhood were in underweight category with severer thinness (19%) and 5.1% with moderate thinness category. Rest was in mild thinness category. On the other hand, 86.9% of women who married at the age over 18, were normal weight category, 5.3% were in obese category and 2.6% in pre-obese category. Only 5.3% women were in underweight category (Table 4). When the present study was compared with whole Indian scenario in 2005-2006, 35.4% Indian women who married before 18 year were underweight category and 53.5% in normal weight category.⁴ Similarly

when the present study was compared with the women married before 18 year in Andhra Pradesh and Bihar provinces, 30.78% were in underweight category in Andhra Pradesh and 43.09% were underweight in Bihar, which were less than the present study in both provinces.⁴ The population of the previous studies was a mixed population of all religion. When age at marriage was correlated with BMI, a moderate positive significant correlation of 0.52 ($p < 0.05$) was observed in the present study. But a very poor negative correlation ($r = -0.25$) was observed between the number of child-birth by the child bride after marriage and BMI. Similarly a positive weak relationship was observed when the age at first child birth was correlated with BMI ($r = 0.48$).

Most of the previous studies were from mixed population of different religion, but the present study was limited to Muslim community of West Bengal only. The limitation was also extended to normal population; where pregnant and physically challenged participants were deliberately excluded to satisfy the aim of the study.

CONCLUSION

Child marriage has a negative impact on younger brides' health. This might be due to early pregnancy which results various medical issues to the mother. It causes various health problems which directly or indirectly affect the nutritional status of the married women which is reflected in low BMI in most cases. In the present study, a positive relationship ($r = 0.52$) was observed in between age at marriage and corresponding BMI; which indicated that age at marriage of the Muslim women of the present study had a negative impact on nutritional status. Younger bride had the chance of more negative impact on health than adult bride. Thus from the present study, it could be concluded that most of the Muslim women who married before 18 year were underweight and child marriage caused malnutrition to the mother.

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