RESEARCH REVIEW JOURNALS
Volume-03
Issue-08
August-2018

ISSN: 2455-3085 (Online)
RESEARCH REVIEW International Journal of Multidisciplinary
www.rrjournals.com [UGC Listed Journal]

Assessment of Fertility Behaviour of Muslim Minorities: A Demographic Appraisal of Malda District, West Bengal

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ARTICLE DETAILS

Article History
Published Online: 07 August 2018

Keywords
Fertility, ASFR, OSFR, Muslims and Coale's Index of Fertility

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ABSTRACT

According to 2011 Census, the population size of Malda district was 3,997,970. Muslims form the majority of population (51.27%) while Hindus are second largest religion (about 48%) of the district. The ASFR (Age Specific Fertility Rate) of Malda is more than West Bengal in all age groups of reproductive age groups. As per Census of India (2011), the decadal growth of population in Malda (21.5%) was more than the West Bengal (13.84%) and India (17.64%). High fertility is observed among Muslims compared to other religions of the district. The analysis of OSFR (Order Specific Fertility Rate) by religion, highlights that the higher order births among Muslims is more compared to Hindus. The OSFR of Hindus and Muslims at 7^{th} + above order are 0.70/1000 and 3.80/1000 married women respectively. The factors affecting higher OSFR among Muslims are low level of literacy, poverty, lack of family planning, high child mortality etc. Coale's Index of Marital Fertility *(I_g)* has also been applied to find out fertility variations among two major religions i.e. Hindu and Muslims in the district and it is observed that the value is highest in Muslims (0.281565). The main objective of this study is to find out fertility behaviour of Muslim minorities.

1. Introduction

The determinants of population dynamics of any region are fertility, mortality and migration. Fertility is an important determinant of population change. The population growth of the world entirely depends on human fertility (Bhende & Kanitkar 2011). Fertility is a very important demographic component because without it biological replacement of population is impossible. In other words fertility is only component for the survival of the human society in the world. But on the other hand high fertility rate in developing and underdeveloped countries are responsible for many socio- economic problems. Rajan (2005) presented estimates of TFR and CBR of Hindu and Muslims for 594 districts of India and assessed state and district level differentials in fertility rate and observed that Malda district had 2nd highest TFR among Muslims in West Bengal and Muslim fertility was higher in all the districts compared to Hindu. Muslims were more likely to desire additional children compared to other religion (Morgan et al, 2002). Muslims are much more likely than Hindus to intend to have additional children and, among those who do not want more children; Muslims are much less likely than Hindus to use contraceptives (Dharmalingam and S. Morgan (2004). In the Status of Women and Fertility study for India, the respondents were asked why they did not use contraceptives. Muslims were generally more likely than Hindus to say "against religion," but it was not a routinely given response (Morgan et al., 2002). In contrast, Knodel et al., (1999) found the "against religion" response much more common among Thai Muslims than among Thai Buddhists. Specifically, Thai Muslims frequently viewed modern contraceptive methods, when used for "stopping" childbearing, as similar to sterilization (and thus problematic). The prevalence of this "against religion" response varied across Thai Muslim groups. Bhagat and Praharaj (2005) in their study on Hindu-Muslims Fertility Differentials in India found that lower level of contraceptive use among Muslims is an important reason for high fertility.

2. Objectives of the Study

The important objectives of this study are-

i. To analyze fertility behaviour of Muslims of the Malda district and
ii. To compare the fertility behaviour between Hindus and Muslims of the district.

3. Materials and Method

This study has been done based on secondary sources like Census of India (F Tables) and NFHS-4. The important fertility measure used to in this study are Age Specific Fertility Rate (ASFR), General Fertility Rate (GFR), Total Fertility Rate (TFR) , Gross Reproduction Rate (GRR), Net Reproduction Rate (NRR), Order Specific Fertility Rates (OSFR) and Coale's Indices of Fertility (I_f and I_g).

4. Result and Discussion

4.1 Fertility and Associated Socio-Demographic Factors

Rehana Siddiqui (1996) in her study on Socio-economic Factors effecting Fertility Behaviour observe that there is negative correlation between per capita income and fertility rate and education is important social parameter effecting low fertility among female. The increase in uncertainty about future income can lead people to postpone their childbearing decision (Ranjan.P, 1999).

Annamaria Milazzo (2014) in her study explains that son preference is reflected in women's reproductive behaviour and family structure. Pramila Rai et al., (2014) in their study highlighted that son preference is predominant in developing countries of South Asian and its effect is more during fertility transition. In many South Asian countries, including India, there is a strong preference for sons over daughters. Deepankar

Basu & Robert De Jong (2010) in their study observed son targeting fertility behaviour.

Gauthier (1997) in his paper investigated of whether higher governmental support for families has a positive effect on fertility by encouraging parents to have more children. The empirical analysis is based on differences and similitude across countries in the levels of governmental support for families in 22 industrialized countries for the period 1970 to 1990. Rosenzweig & Evenson (1977) in their paper "Fertility, schooling, and the economic contribution of children of rural India: An econometric analysis" highlighted child's act as economic asset in rural economy particularly in agricultural base society.

Arnold et al., (1998) in his paper "Son preference, the family-building process and child mortality in India." analysed data from the National Family Health Survey are used to examine the effect of son preference on parity progression and ultimately on child mortality. The hazard model used to understand demographic effects of family composition. The analysis indicates that son preference fundamentally affects demographic behaviour in India. Family structure and composition affects fertility behaviour in every state and son preference is the predominant which influence fertility behaviour.

Raj et al., (2009) in their paper "Prevalence of child marriage and its effect on fertility and fertility-control outcomes of young women in India: a cross-sectional, observational study" highlighted that nearly half of adult Indian women aged 20–24 years were married before the legal age of 18 years which directly affect fertility. The rural, poor, illiterate and less educated girls and girls from central or eastern regions of the country are most vulnerable to the practice.

NFHS-4 data clearly indicates that literate women between 15-49 age group, are less in Malda (64.2%) compared to India (68.4%) and West Bengal (71.0%). Level of literacy and educational attainment had direct effect on fertility. The study by Roach (2009) on 'The Effect of Fertility Levels on the Educational Attainment of Children in Uganda' represents relationship between fertility level and educational attainment of children in Uganda. The high educational level of children is observed in areas of low fertility. Osili and Long (2008) found the schooling of female has direct impact on fertility reduction in Nijeria. Brand & Davis (2011) highlighted on the effect of increased college going women affected level of fertility. The late onset of child bearing and having low parity observes among educated women compare to less educated women. The percentage of women aged 15-49 with 10 or more years of schooling is also low in Malda (19.2%) compared to West Bengal and India. So, low level of literacy and less year of schooling are important determinants of high fertility in Malda. The percentage of women already mothers or pregnant during survey (age 15-19) was very high in Malda (24.9) compared to India (7.9) and West Bengal (18.3). Total Fertility Rate of Malda is 2.3 per women whereas it is only 1.8 in West Bengal. Family planning has important effect on fertility behaviour and it is observed that current use of family planning method is low (60.3%) in Malda compared to W.B. (70.9). Female and male sterilization are also low in Malda compared to W.B. which is important determinant of high fertility in Malda district.

Table-1
Socio-Demographic Factors and Fertility

Literacy and Age at Marriage	**India**	**W.B.**	**Malda**
Women aged 15-49, who are literates, (%)	68.4	71	64.2
Women aged 15-49 with 10 or more years of schooling (%)	35.7	26.5	19.2
Women age 20-24 years married before age 18 years (%)	26.8	40.7	54.8
Men who are literates between 15-49 years age (%)	85.7	81.1	71.7
Current use of family planning methods			
Any method (%)	53.5	70.9	60.3
Any modern method (%)	47.8	57	51.8
Female sterilization (%)	36	29.3	25.4
Male sterilization (%)	0.3	0.1	0.4
IUD/PPIUD (%)	1.5	1.2	0.4
Pill (%)	4.1	20	18.5
Condom (%)	5.6	5.9	6.5
Fertility			
Total Fertility Rate (Children per women)	2.2	1.8	2.3
Women already mothers or pregnant during survey (age 15-19)%	7.9	18.3	24.9

Source: Prepared based on Report of National Family Health Survey- 4 (2015-2016)

Fertility is a primary determinant of population growth in any country. So, high fertility in Malda is responsible for rapid population growth. As per Census of India, 2011 the decadal population growth of Malda was 21.5 % whereas in case of W.B. and India it was 13.84% and 17.64% respectively. There is huge gap in population growth between Hindus and Muslims

counting 25% for Muslims and 18.06% for Hindus. Both CBR and GFR are higher in Malda compared to W.B. Again high gap in CBR and GFR can be observed between Hindus and Muslims. The CBR of Hindus and Muslims were 20.85 and 15.95 respectively and GFR of Hindus was 64.49 whereas it was much higher of Muslims (86.83).

Table-2
Comparative Demographic Scenario among Malda, West Bengal, India (2011)

Demographic Characteristics	India	West Bengal	Malda	Malda (Muslims)	Malda (Hindus)
Decadal Growth Rate of Population 2001-2011 (%)	17.64	13.84	21.5	25	18.06
Population Density (Persons/Sq. Km)	382	1028	1069	-	-
Crude Birth Rate (per 1000)	21.6	16.1	18.59	20.85	15.95
General Fertility Rate	81.2	56.9	73.35	86.83	64.49
Total Fertility Rate(per women)	2.2	1.8	2.3	3.5	

Source: Census of India-2011, and # NFHS-4 (2015-16

4.2 Pattern of Fertility in Malda District

Fertility is one of the important biological phenomena in our society to replace the present generation. There are various socio-demographic, cultural and biological determinants which affect fertility behaviour. The Crude Birth Rate (CBR) per thousand population in the districts is 18.59. General Fertility Rate (GFR), Total Fertility Rate (TFR) and GRR (Gross Reproduction Rates of this district are 73.35, 2332.03 and 1137.89 /per 1000 respectively. These figures are much higher than state average resulting high dependency of child population on working age group population.

Table- 3
Fertility in Malda, 2011

Age Group	ASFR	ASMFR	CBR/1000	GFR/1000	TFR/1000	GRR/1000
15-19	49.01	149.36	18.59	73.35	2332.039	1137.89
20-24	151.54	186.67				
25-29	113.34	123.42				
30-34	66.05	70.81				
35-39	35.59	38.54				
40-44	24.87	28.23				
45-49	26	30.68				

Source: Calculated by the Researcher based on Census of India Data, 2011

The difference between Malda and West Bengal in ASFR and ASMFR are higher in age groups 20-24, 25-29 and 30-34 while lower rates are observed in lower and upper reproductive age groups, i.e. 15-19, 40-44 and 45-45. The highest and lowest gaps in ASFR are observed in 20-24 and 45-49 age groups while the highest and lowest gaps in ASMFR are observed in 25-29 and 45-49 age groups in Malda district. One of the important findings is that in the age group 20-24, both the ASFR and ASMFR are highest in all regions. So, this age group may be considered as 'fertility boom' age group. The fertility rates (both ASMF and ASMFR decline with higher age groups due to pregnancy complications and higher chances of both maternal and child mortalities.

Table -4
Pattern of Fertility in Malda: A Comparative Analysis, 2011

Age group	West Bengal		Malda		Malda (Rural)		Malda (Urban)	
	ASFR/ 1000	ASMFR/ 1000	ASFR/ 1000	ASMFR/ 1000	ASFR/ 1000	ASMFR/ 1000	ASFR/ 1000	ASMFR/ 1000
15-19	39.78	142.74	49.01	149.36	50.76	151.06	37.42	135.64
20-24	116.29	154.97	151.54	186.67	158.34	190.46	109.99	158.89
25-29	78.81	88.61	113.34	123.42	117.15	126.24	90.37	105.05
30-34	40.62	44.13	66.05	70.81	67.43	72.01	58.27	63.83
35-39	19.7	21.45	35.59	38.54	36.77	39.72	28.78	31.59

40-44	17.47	19.72	24.87	28.23	25.63	29.02	20.54	23.63
45-49	22.87	26.89	26	30.68	26.38	30.96	23.83	29.05

Source: Calculated by the Researcher based on Census of India Data, 2011

4.3 Coale's Index of Overall and Marital Fertility (I_f and I_g)

Coale's Overall Fertility Index (I_f) has been calculated based on total women in different age groups of reproductive age span (15-45) to standardized the fertility data of the Malda taking age specific fertility rates of Hutterites as standard. The expected births worked out by applying the Hutterite marital fertility schedule to women in Malda in 2011 were 381023 and the actual births were 73589 and thus we have the ratio of actual to expected is 0.193135. Applying the same method, the Coale's Index of Marital Fertility (I_g) has been calculated for each age group. But in this case only married females are considered instead of all females in each age group. It is observed that I_g value of rural areas (0.239258) is higher than the urban areas (0.19281) indicating higher fertility of rural areas.

Table -5
Coale's Index of Overall Fertility (I_f) for Malda, 2011

Age Group	Total women	ASFR per 1000	Hutterite fertility	No of Birth	Expected no of birth	I_f
15-19	2,00,587	49.01	300	9,831	60176	0.193135
20-24	1,82,956	151.54	550	27,725	100626	
25-29	1,56,232	113.34	502	17,708	78428	
30-34	1,27,747	66.05	447	8,438	57103	
35-39	1,33,812	35.59	406	4,763	54328	
40-44	1,12,063	24.87	222	2,787	24878	
45-49	89,898	26	61	2,337	5484	
∑				73589	381023	

Source: Computed by Researcher based on Census of India Data, 2011

4.4 Rural Urban Differentials in Muslim Marital Fertility (Ig)

The marital fertility for both rural and urban areas of Malda and West Bengal has been calculated to show fertility behaviour of Muslims. Fig.-1 shows that the Coale's index of Marital fertility (I_g) of Muslims is higher in Malda (0.281565) compared to West Bengal (0.233207). In rural areas it is 0.284001 whereas in urban areas the value is 0.169676. The factors affecting higher fertility in rural areas are early age marriage, lack of awareness of family planning, high child mortality. It is observed that in urban areas of Malda district the Coale's index of fertility is lower (0.169676) than the urban areas of West Bengal (0.223603).

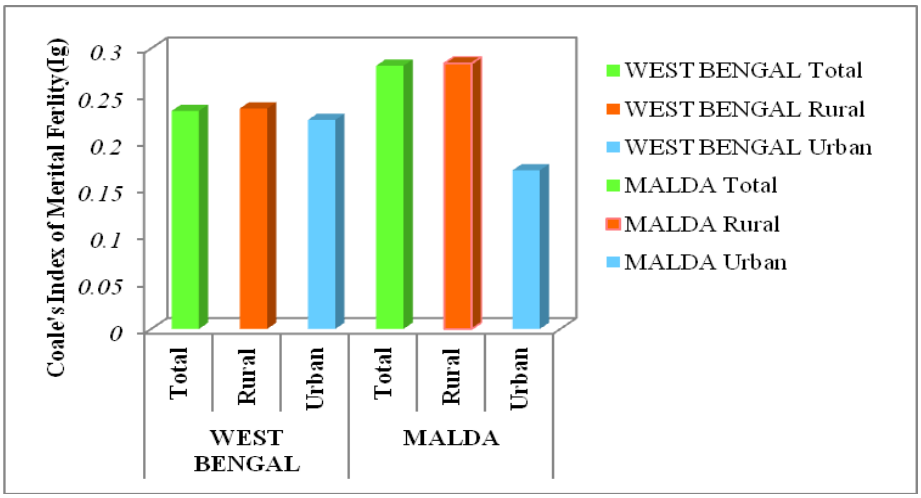

Fig. -1: Age Specific Muslim Fertility

4.5 Pattern of Age Specific Marital Fertility of Muslims in West Bengal and Malda

The Age Specific Fertility Rate (ASFR) is much higher in rural areas of Malda compared to rural West Bengal almost in all age groups (Fig.-2) whereas the Age Specific Muslim Fertility is lower in urban areas of Malda compared to urban areas of West Bengal. The highest Muslim fertility is found in 20-24 age group while the lowest in 45-49 age group. The general trend of fertility is fertility decreases with increasing age group due to the complications in pregnancy, increasing maternal and child mortality but still the Muslim fertility is still higher in upper age groups (35+).

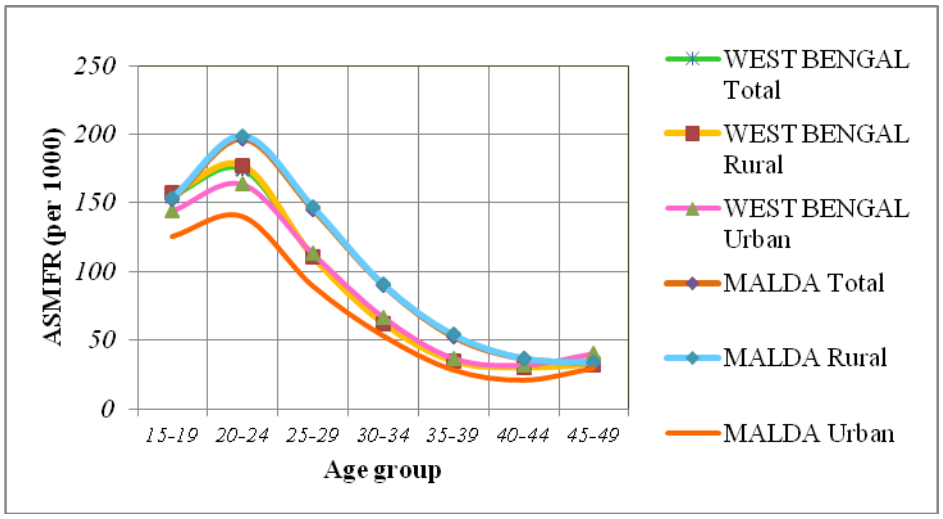

Fig.-2: Age Specific Muslim Fertility

4.6 Comparative Fertility behaviour between Hindus and Muslims

One of the many debatable issues in India is fertility variations among Hindus and Muslims. In Malda district age wise marital fertility have been calculated and also compared to the West Bengal. Fig.-3 indicate that the fertility trends of Malda are higher than state, i.e. West Bengal in all reproductive age groups. It can also be observed that the fertility rate of Muslims is higher compared to Hindus of Malda, all religions of West Bengal and Malda.

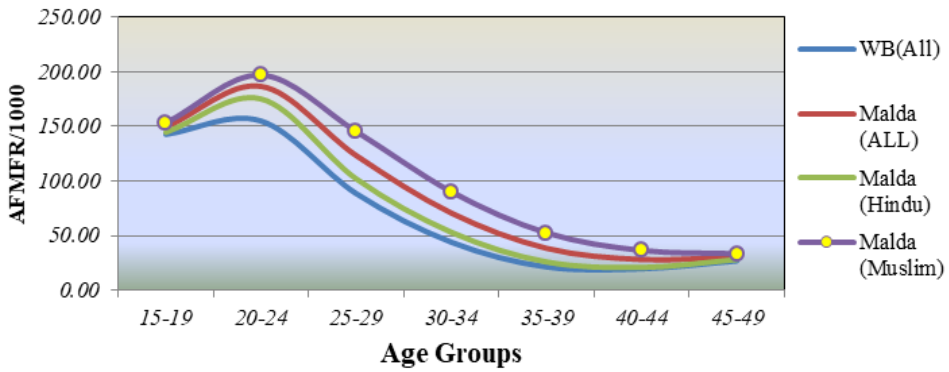

Fig.-3: Age Specific Marital Fertility Rate-2011

Coale's Index of Marital Fertility (I_g) also has been applied to find out fertility variations among two major religions i.e. Hindu and Muslims in the district and it is observed that the value is highest in Muslims (0.281565). The index for Hindus is 0.203576 which is also much higher than the state index of 0.178201. So, it may be concluded that Muslims are not only backward in terms of high fertility, but Hindus of Malda having high fertility index are lagging behind West Bengal's all religions. These figures are enough to interpret the causes of backwardness of this district in terms of socio-economic development, because high fertility leads to high dependency and associated demographic burden in our society.

Table-6
Coale's Index of Marital Fertility (Ig) for Malda by Religion, 2011

Religion	I_g
All Religion (WB)	0.1782
All Religion (Malda)	0.24249
Hindu (Malda)	0.20358
Muslim(Malda)	0.28157

Source: Computed by Researcher based on Census of India Data, 2011

Order Specific Fertility Rates (OSFR) by religion: The analysis of OSFR by religion highlights that the higher order births among Muslims is more compared to Hindus. The OSFR of Hindus and Muslims at 7th + above are 0.70 and 3.80/1000 married women respectively. The factors affecting higher OSFR among Muslims are low level of literacy, poverty, lack of family planning, high child mortality etc.

Table-7
Order- Specific Fertility Rate (OSFR) by Religion in Malda District-2011

Birth Orders	All Religions			Hindu			Muslim		
	No. of Births	Total Currently Married Women	OSFR /1000	No. of Births	Total Currently Married Women	OSFR /1000	No. of Births	Total Currently Married Women	OSFR /1000
1	30057	775479	38.76	14140	3,86,891	36.55	15735	383454	41.03
2	20514		26.45	9216		23.82	11177		29.15
3	11295		14.57	4296		11.10	6938		18.09
4	5804		7.48	1730		4.47	4049		10.56
5	2741		3.53	647		1.67	2089		5.45
6	1448		1.87	233		0.60	1213		3.16
7+	1730		2.23	270		0.70	1457		3.80

Source: Computed based on Census of India Data, 2011

There are variations in Order Specific Fertility Rates (OSFR) between Hindu and Muslims at all birth orders in the Malda District. The higher order fertility rate (4th and above) of Muslims is much higher than Hindus of the district. The OSFR among Muslims is more than 5 times compared to Hindus at 6th order and 7+ orders. The late age pregnancy adversely affects both maternal and child health of poor Muslims.

Fig.-4: OSFR of Muslims and Hindus

The study on OSFR by Age Group indicates that the higher order fertility rate (4th and above) in age groups 35+ is more in Muslims compared to Hindus. The early age birth (<19 years) is also higher among Muslims compared to Hindus. Both the early age and late age child births may affect maternal and child health in Malda. It has been established by number of studies that delayed pregnancy and child birth may cause infertility, miscarriage, still birth, preterm birth, gestational diabetes, hypertension, C-section delivery etc. So, there is no doubt that Muslim minorities are more vulnerable to these problems due to the delayed pregnancy and higher birth orders.

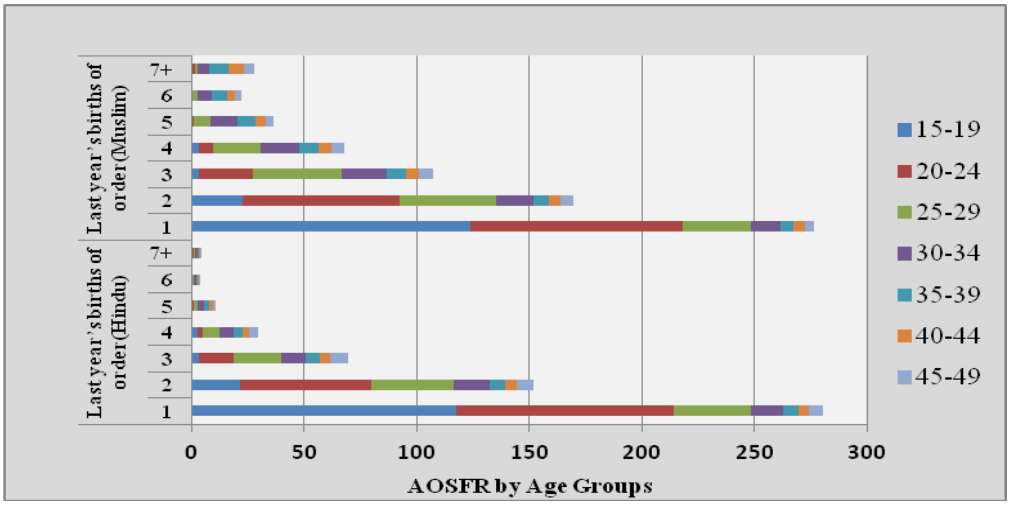

Fig-5: OSFR by Religion and Age Group

5. Conclusion

The percentage of literate women in Malda between age group 15-49 is only 64.2 and percentage of women completed 10 or more years of schooling between age group 15-49 is 19.2 which are lower than state and National average. The level of literacy affects fertility rate of any region. Due to low level of literacy the TFR in Malda is higher than the state and National average. The percentage of pregnant women during survey was also high in Malda compared to National and state level. The current use of family planning methods are also below state average in Malda district. The factors affecting high fertility among Muslim minorities are low educational level of females, early age marriage, son preference, agricultural society, lack of awareness of family planning programmes, low level of empowerment etc. The high fertility induced maternal health vulnerabilities are common in our society and Muslim females are not exception. Preterm birth, anaemia, maternal mortality, still births etc. are the results of multiple births. The adverse effects of high fertility and multiple births on new-born among Muslims are underweight baby, fetal death, infant mortality, physical and mental disorder etc. So, the study is very significant for Malda district. Social awareness is very important to improve maternal and new born health vulnerabilities in Malda through fertility reduction.

Acknowledgement:

I would like to thank Indian Council of Social Science Research, New Delhi for providing financial grant to carry out the Major Project on “An Empirical Study of Fertility Behaviour and Analysis of Multiple Births Induced Maternal and New born Health Vulnerabilities of Muslim Minorities: A Case Study of Malda District of West Bengal”.

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