

# Measuring Level and Pattern of Infertility and Childlessness in India

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**Abstract:** Conceptualizing infertility and childlessness from a data which ask no direct question about infertility and childlessness is quite complex. However, an attempt has been made to define these two terms separately instead of using them synonymously as has been done in some of the literatures. The control variables have been cautiously selected to get some approximation about levels and patterns of infertility and childlessness in India by using NFHS-2 (1998-1999) and NFHS-3 (2005-2006) data. The study population is currently married women aged 20-49 years married for above 5 years. Age of women, age at first marriage, place of residence, standard of living, working status of women, regions are some of the factors influencing rate of infertility and childlessness. However due to limitation of data, much in-depth analysis about this phenomena is not plausible.

**Keywords:** total fertility rate, primary infertility, childlessness

## Introduction

For many couples, the inability to bear children is a tragedy. The conflux of personal, interpersonal, social, and religious expectations brings a sense of failure, loss, and exclusion to those who are infertile. Relationships between couples can become very strained when children are not forthcoming. One partner may seek to blame the other as being defective or unwilling. Childless couples are also excluded from taking leading roles in important family functions and events such as birthdays, christenings, confirmations, bar mitzvahs and weddings. Moreover, many religions assign important ceremonial tasks to the couple's children. Socially, most societies are organized, especially in the developing countries, such that children are necessary for care and maintenance of older parents. Even in developed countries with social support systems, children and family are expected to provide much of the care for the elderly (Rutstein and Shah, 2004). The reproductive system is susceptible to the environment. However, the reproductive failures are aggravated due to the widespread condition of the environment, which is influenced by cultural, religious, political and socio-economic factors. Etiology of infertility varies from region to region and from one population to another and even from one locality to another within the same population. To the major part, involuntary infertility is largely related to conditions that are preventable in nature such as sexually transmitted diseases, infections and parasitic diseases, iatrogenic health care practices, exposure to toxic substances either in the diet or environment and complications suffered during post partum or post abortion period, particularly in case of illegal induced abortion.

Living as an involuntarily childless woman is challenging for femininity and the female role. Norms may be difficult for those who prefer to live according to them, but they are even more difficult for those who have no choice (Sundby, 1999). Childlessness has serious demographic, social and health implications. The ease with which women can be labelled infertile or resist the label, the experiences of childless women and the process of seeking solution for infertility all go beyond the biological fact of reproductive impairment (Unisa, 1999; Pearce, 1999). Partly due to its complexity and difficulty in preventing, diagnosing and treating it, infertility is a global health

concern. Childlessness is of particular concern because of the extent of the problem and the social stigma attached to it.

Infertility is a worldwide problem affecting 8-12 percent couple (50-80 million) during their reproductive lives (WHO, 1991). In Sub-Saharan Africa, the prevalence of infertility, as measured by the percentage subsequently infertile among women married at least five years, ranged from less than 10 percent in Togo and Rwanda to about 25 percent in Cameroon and Central African Republic of women aged 20-44 years (Larsen, 2000). However, the single major cause of infertility, in all probability is gonorrhoea through tubal infection and occlusion in women (Frank, 1983). High level of infertility is associated with high level of sexual mobility like, premarital sex and illegitimacy, divorce, extramarital sex and prostitution. From Demographic and Health Surveys 1994-2000, it was found that 3.3 percent in Mozambique and 1.3 percent in Kenya of currently married women had no fertile pregnancies in the age group 25-49 and among those women who had sex but no pregnancy are 4.6 percent in the former and 2.5 percent in the latter country (Rutstein and Shah, 2004).

Census of 1981 estimates infertility in India around 4-6 percent and according to NFHS-1 childlessness is around 2.4 percent of currently married women over 40 years in India (cited in Jejeebhoy, 1998). Childlessness in India is estimated around 2.5 percent. It is around 5.5 percent for 30-49 age group and 5.2 percent for 45-49 age group. In absolute terms it is around 4.9 million and if secondary infertility is also added to it then total number of infertile couples is around 17.9 million (Shivaraya and Halemani, 2007). Infertility has been relatively neglected as both a health problem and a subject for social science research in South Asia, as in the developing world more generally. The general thrust of both programmes and research has been on the correlates of high fertility and its regulation rather than understanding the context of infertility (Jejeebhoy, 1998). Hence, an attempt has been made to understand the level and pattern of infertility and childlessness in India.

## **Data and methodology**

National Family Health Survey-2 (1998-1999) and National Family Health Survey-3 (2005-2006) have been used for the analysis. National Family Health Survey-2 (1998-1999) data provides information on fertility, mortality, family planning and important aspects of nutrition, health and health care. The NFHS-2 survey covered a nationally representative sample of more than 90,000 ever-married women age 15-49 from 26 states that comprise more than 99 percent of India's population (IIPS, 2000). NFHS-3 collected information from a nationally representative sample of 109041 households, 124385 women of the age group 15-49 and 74369 men of the age group 15-54. The NFHS-3 sample covers 99 percent of India's population living in 29 states. It included questions on several emerging issues such as perinatal mortality, male involvement in maternal health care, adolescent reproductive health, higher risk sexual behaviour, family life education, safe injections and knowledge about tuberculosis (IIPS, 2007). Individual files (women) of both rounds of NFHS have been used for the present study.

For the present analysis currently married women of age group 20-49 married for more than 5 years have been selected. Age group below 20 has been excluded for removing the impact of adolescent sterility from the analysis. NFHS do not give direct question on infertility and childlessness. With the help of certain control variable as elaborated in the following section, infertility and childlessness rates have been calculated. The control variables however do not bring out the fact that infertility or childlessness is as a consequence of women's or her husband's cause. The way terms have been defined as per the availability of variables in the data, it is better to address the phenomena from the perspective of couple rather than women. However, for the ease of writing, women have been referred.

The classification of states into regions has been done as per the classification done in NFHS-3.

### **Definition and Measurement Problems**

The comparative studies of infertility are hampered by the fact that different definitions are being employed in epidemiological and demographic research. In English demographic terminology, primary infertility (also called as primary sterility) is defined as the inability to bear any children, either due to the inability to conceive or the inability to carry a pregnancy to a live birth. In Medical studies, however, infertility is usually defined only as the inability to conceive. In English demographic language, the term “infecundity” refers to the inability to conceive after several years of exposure to the risk of pregnancy. Inability to conceive within two years of exposure to pregnancy is the epidemiological definition recommended by the World Health Organization. Clinical studies often use a one-year period of exposure. It is common in demographic studies to use a period of five years (Rutstein and Shah, 2004). The terminology used in the analysis are as follows:

#### **Primary infertility**

Women who are currently married for more than 5 years, currently not pregnant, having no terminated pregnancy, never used contraceptives and have zero total children ever born.

#### **Childlessness**

Women who are currently married for more than 5 years, currently not pregnant, having no terminated pregnancy, never used contraceptives and have no living children.

### **Result and discussion**

#### ***Total fertility rate***

Total fertility rate (TFR) among currently married women between 20-49 age groups married for more than 5 years has been shown in Table 1. In India, TFR has increased from 3.34 to 3.89 (children per women) from NFHS-2 to NFHS-3 among this group of population. TFR has inverse relation with age at first marriage in both rounds of NFHS i.e. higher the age at first marriage lower the total fertility rate. In NFHS-3, it is 3.80 children per women among those whose age at first marriage is 18 years and below and 2.39 children per women among those women whose age at first marriage is above 18 years. Similar pattern can be seen in NFHS-2. Women in rural areas (4.07 children per women) have higher TFR compared to women in urban areas (3.41 children per women) according to NFHS-3. NFHS-2 too depicts the same pattern. In both the surveys, Muslim has higher TFR i.e. 4.28 and 4.84 children per women in NFHS-2 and NFHS-3 respectively compared to other religious groups. TFR is 3.21 and 3.74 among Hindu; 3.27 and 3.44 among Christian and 2.81 and 3.73 (children per women) among others category of religion which comprises of Sikh, Buddhist/ Neo Buddhist, Jain, Jew, Zoroastrian/ Parsi and no religion in NFHS-2 and NFHS-3 respectively. Among scheduled caste, scheduled tribe and others, it can be seen that scheduled tribe has highest TFR i.e. 3.56 and 4.34 respectively in both rounds of NFHS. With the increase in the level of educational attainment among women, TFR reduces. According to NFHS-3, women with no education have 4.35 children per women whereas it decreases to 3.48 and 3.33 children per women with primary and secondary education respectively. Women with higher education have 2.70 children per women. NFHS-2 also portrays the same result.

Mass media exposure which is defined on the basis of exposure to television, newspaper or radio shows that increase in mass media exposure among women decrease TFR. Women with no exposure to mass media has TFR of 4.72 whereas it decreases to 3.48 among women with full

exposure to mass media. In NFHS-2 the decrease is from 3.95 to 2.85 children per women respectively. A gradual decline in TFR can also be observed with rise in women's standard of living. Women with low standard of living have TFR of 3.64 and 4.40 in NFHS-2 and NFHS-3 respectively. Women with medium standard of living, it is 3.35 and 3.89 respectively and women with high standard of living it is 2.85 and 3.52 respectively. Working women has low TFR compared to non-working women. Central region comprising of Chhattisgarh, Madhya Pradesh and Uttar Pradesh have highest TFR in NFHS-2 (4.29) as well as NFHS-3 (5.00). Southern region which includes states of Andhra Pradesh, Karnataka, Kerala and Tamil Nadu have lowest TFR i.e. 2.36 and 2.75 in both rounds of survey respectively. Northern (Delhi, Haryana, Himachal Pradesh, Jammu and Kashmir, Punjab, Rajasthan and Uttaranchal) and eastern regions (Bihar, Jharkhand, Orissa and West Bengal) have higher TFR compared to northeastern (Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura) and western (Goa, Gujarat and Maharashtra) regions.

Apart from the facts in aforementioned paragraphs, it can also be observed that TFR has increased from NFHS-2 to NFHS-3 among currently married women between 20-49 age groups married for more than 5 years. The decline (of around 7 percent) has only been among women whose age at first marriage is above 18 years. The maximum change of around 33 percent has been among women belonging to others category of religion which comprises of Sikh, Buddhist/ Neo Buddhist, Jain, Jew, Zoroastrian/ Parsi and no religion. Women with partial mass media exposure (24.64 percent), belonging to high standard of living (23.61 percent), scheduled tribe (21.76 percent), those belonging to low standard of living (20.97 percent) and women in eastern region (20.51 percent) have change in TFR of above 20 percent. In India as a whole, the change has been around 16 percent.

### ***Infertility rate***

In India, rate of infertility has relatively changed by -7.77 percent from NFHS-2 to NFHS-3 (Table 2). It is around 2 percent in NFHS-2 and around 1.85 percent in NFHS-3. Infertility rate increases with increase in age at first marriage. In NFHS-3 it has increased from 1.68 to 2.35 percent among women with age at first marriage 18 years and below to those whose age at first marriage is above 18 years respectively whereas in NFHS-2 it has increased from 1.86 to 2.54 percent respectively. Another point to be noted is that infertility rate is higher among women in urban areas (2.09 and 1.94 percent) compared to women in rural areas (1.98 and 1.81 percent) in both rounds of NFHS respectively. In NFHS-2, infertility rate is higher among women belonging to Hindu religion (2.06 percent) and other religious groups which comprises of Sikh, Buddhist/ Neo Buddhist, Jain, Jew, Zoroastrian/ Parsi and no religion (2.02 percent). Among Christian (1.95 percent) and Muslim (1.61 percent), it is comparatively lower. However in NFHS-3, infertility rate is high among Christian (2.03 percent) followed by Hindu (1.86 percent), Others (1.78 percent) and Muslim (1.75 percent). Among women belonging to different castes, those belonging to scheduled tribe has higher infertility rate in both rounds of survey i.e. 2.56 and 2.25 percent respectively compared to those belonging to scheduled caste and others category. Level of educational attainment among women however does not depict any pattern. In NFHS-2, infertility rate is 2.16, 1.62, 2.00, 1.72 percent among women with no education, primary, secondary and higher education respectively whereas in NFHS-3 it is 1.81, 1.75, 1.89 and 2.38 percent respectively.

Mass media exposure has shown direct relation with infertility rate in NFHS-2 and indirect relation with NFHS-3. Women with none, partial or full exposure to mass media have 2.05, 1.98 and 1.94 percent infertility rate respectively in NFHS-2 whereas in NFHS-3, it is 1.79, 1.84 and 2.01 percent respectively. Women belonging to low standard of living have high infertility compared to women belonging to medium and high standard of living. It is 2.28, 1.86 and 1.93 percent respectively in NFHS-2 and 2.17, 1.71 and 1.63 percent respectively in NFHS-3. Working

women have high infertility compared to non-working women. It is 2.23 and 1.86 percent respectively in former survey and 2.02 and 1.74 percent respectively in latter survey. Infertility rate is high in western and southern regions i.e. 2.30 and 2.09 in NFHS-2 and 2.01 and 2.48 percent in NFHS-3 respectively. Eastern and central regions too depict comparatively high infertility rate i.e. 2.12 and 1.97 percent in NFHS-2 and 1.65 and 1.67 percent in NFHS-3 respectively. In north and north east infertility rate is relatively lower.

It can be observed that unlike total fertility rate, infertility rate has declined between NFHS-2 and NFHS-3. The decline has been maximum among women belonging to eastern region (22.33 percent), north eastern region (19.86 percent), women with no education (16.04 percent), high standard of living (15.30 percent) and those belonging to central region (15.27 percent). Increase in infertility rate has been observed (in descending order) among women with higher education (38.27 percent), belonging to southern region (18.60 percent), those who are Muslim (8.64 percent), with primary education (8.02 percent), women who are Christian (4.03 percent), having full mass media exposure (3.63 percent).

### ***Childlessness rate***

Childlessness rate has decreased from 3.01 to 2.65 percent from NFHS-2 to NFHS-3 in India as a whole (Table 3). Like infertility rate, childlessness rate too increase with increase in age at first marriage. It is 2.83 and 3.65 percent in NFHS-2 among women with age at first marriage 18 years and below to those whose age at first marriage is above 18 years respectively. In NFHS-3, it is 2.47 and 3.18 percent respectively. Place of residence do not depict any notable difference. Childlessness is high among Christian and Hindu followed by Muslim and those belonging to others category. Accordingly it is 3.46, 3.09, 2.54 and 2.37 percent respectively in NFHS-2 and 2.95, 2.71, 2.28 and 2.39 percent respectively in NFHS-3. Scheduled tribe has high childlessness rate. It is 4.09 and 3.61 percent in both rounds of NFHS respectively. Childlessness rate is 3.07 and 2.64 percent among scheduled caste respectively and 2.86 and 2.56 percent among others respectively. Women with no education has high childlessness rate but difference in childlessness rate among women with primary, secondary and higher level of educational attainment is marginal.

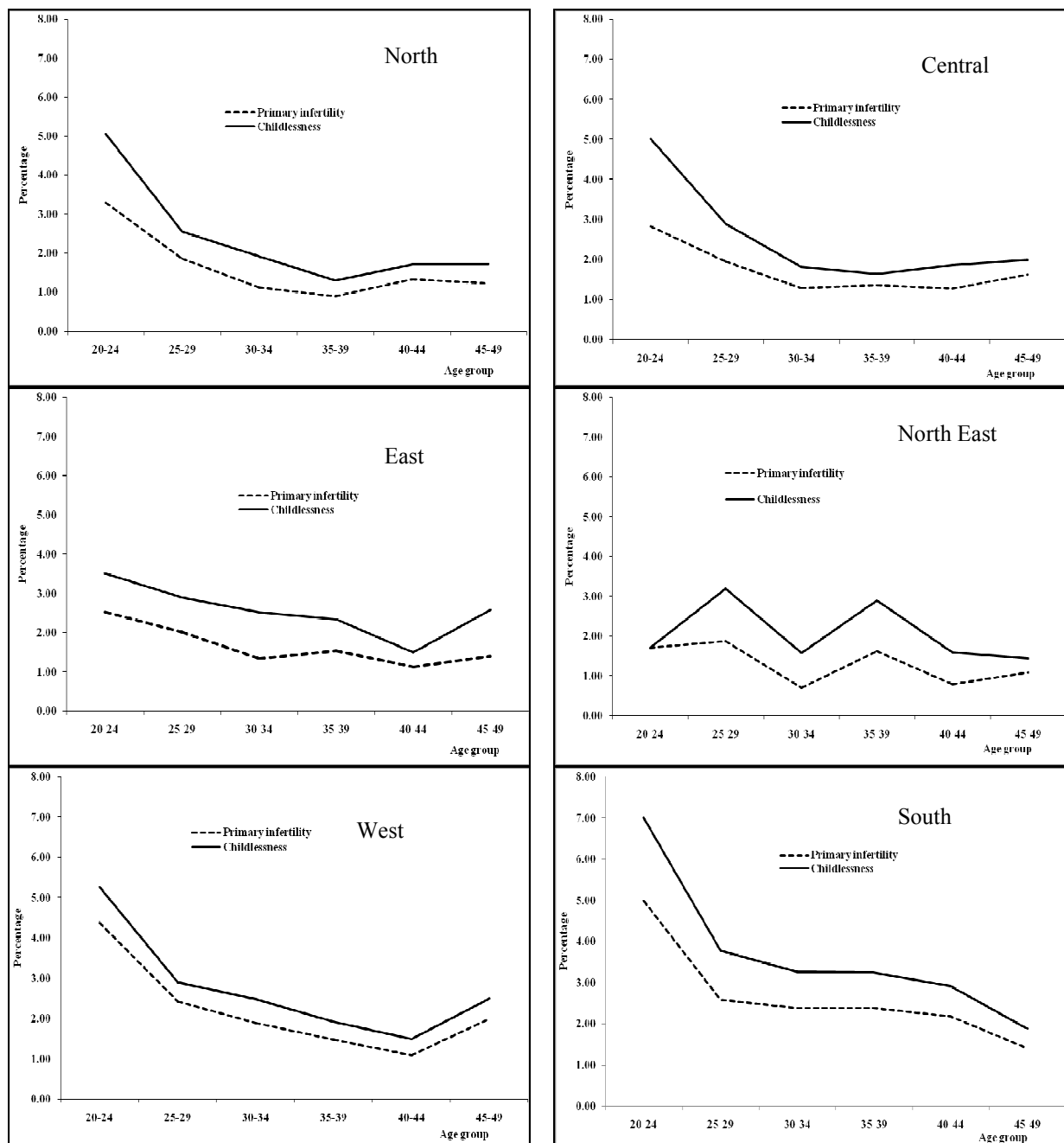
Childlessness rate is high among women with no exposure to mass media. It is 3.16 and 2.71 percent in NFHS-2 and NFHS-3 respectively. Among women with partial exposure to mass media it is 2.93 and 2.63 percent respectively and those with full exposure to mass media it is 2.76 and 2.62 percent respectively. Women belonging to low standard of living have high childlessness i.e. 3.61 and 3.32 percent respectively in both rounds of NFHS. Childlessness decreases with increase in standard of living. Working women have high childlessness compared to non-working women. In NFHS-2, childlessness is high in southern regions (3.33 percent) followed by eastern (3.20 percent), central (3.03 percent), western (3.03 percent), north eastern (2.45 percent) and northern region (2.21 percent). In NFHS-3, childlessness is high in southern regions (3.45 percent) followed by eastern (2.55 percent), western (2.53 percent), central (2.43 percent), north eastern (2.16 percent) and northern region (2.10 percent).

Childlessness rate has decreased over time. It has decreased mostly (in descending order) among women in eastern (20.49 percent) and central (19.72 percent) regions, women with no education (19.63 percent), those belonging to western region (16.44 percent), working women (15.52 percent) and those belonging to high standard of living (15.08 percent). However, childlessness rate has increased among those women with primary (7.49 percent) and higher level (4.42 percent) of educational attainment, women belonging to southern region (3.72 percent) and those belonging to others category of religious group (0.62 percent).

## *Infertility and childlessness rate by age group*

Infertility and childlessness curves in general show a declining pattern with increasing age except north east (Figure 1). In the north, infertility declines from 3 to 1 percent from age group 20-24 to 45-49 whereas childlessness declines from 5 to around 2 percent respectively. Similar pattern can be observed in central and western regions as well. In the north east, a zigzag pattern can be seen about which plausible reasons cannot be given and it requires further in-depth analysis. Eastern and western regions have shown a steep rise at age group 45-49 implying infertility and childlessness is high at the later stage of reproductive life of women.

**Figure 1:** Infertility and childlessness among currently married women age 20-49 who have been married for at least 5 years, National Family Health Survey 2005-2006



### ***Factors determining infertility***

Primary infertility is significantly determined by age of women according to NFHS-2 (Table 4). Women in age group 25-29 through each successive five year age group till 45-49, they are less likely to be infertile compared to women in the age group 20-24. Moreover, women with age at first marriage 18 years and below are 86 percent more likely to be infertile compared to women whose age at first marriage is above 18 years. Women in rural areas are 18 percent less likely to be infertile compared to women in urban areas. Muslims are 22 percent less likely to be infertile compared to Hindu. Scheduled tribes are 21 percent more likely to be infertile compared to scheduled castes. Education is another significant factor influencing infertility. Women with primary, secondary and higher education are 29, 26, and 52 percent less likely to be infertile compared to women with no education. Working women are 20 percent more likely to be infertile compared to non-working women. Compared to women in north; women in central, east, north east, west and south are 39, 49, 5, 49 and 42 percent more likely to be infertile.

Age group is one of the most significant factors for infertility according to NFHS-3 (Table 4). Infertility decreases with increase in age of women. Women with age at first marriage above 18 years are 81 percent more likely to be infertile compared to women whose age at first marriage is 18 years and below. Christians are 34 percent less likely to be infertile compared to Hindu. Scheduled tribes are 31 percent more likely to be infertile compared to scheduled castes. Women belonging to medium and high standard of living are 20 and 28 percent less likely to be infertile compared to women in low standard of living. Working women are 23 percent more likely to be infertile compared to non-working women. Women belonging to western and southern regions are 30 and 75 percent more likely to be infertile compared to women in north.

### ***Factors determining childlessness***

Age of women is a significant factor whereby, childlessness decreases with increase in age of women according to NFHS-2 (Table 4). Women with age at first marriage above 18 years are 87 percent more likely to be childless compared to women whose age at first marriage is 18 years and below. Women in rural areas are 20 percent less likely to be childless compared to women in urban areas. Muslims are 17 percent less likely to be childless as compared to Hindus. Scheduled tribes are 29 percent more likely to be childless compared to scheduled castes. Education also influences childlessness significantly. Women with primary, secondary and higher education are 32, 38, and 52 percent less likely to be childless compared to women with no education. Women with partial or full exposure to mass media are 10 and 24 percent respectively more likely to be childless as compared to women with no exposure to mass media. Women belonging to medium standard of living are 13 percent less likely to be childless. Working women are 17 percent more likely to be childless compared to non-working women. Compared to women in north; women in central, east, north east, west and south are 33, 46, 5, 31 and 47 percent more likely to be childless.

Childlessness is affected by age of women where, as age increases childlessness decreases according to NFHS-3 (Table 4). Women with age at first marriage above 18 years are 81 percent more likely to be childless compared to women whose age at first marriage is 18 years and below. Muslims are 13 percent less likely to be childless as compared to Hindus. Scheduled tribes are 45 percent more likely to be childless compared to scheduled castes. Women with secondary education are 13 percent less likely to be childless as compared to women with no education. Women belonging to medium and high standard of living are 24 and 36 percent less likely to be childless. Working women are 13 percent more likely to be childless compared to non-working women. Women in central and southern region are 18 and 63 percent respectively more likely to be childless compared to women in northern region.

## Conclusions

Conceptualizing infertility and childlessness from a data which ask no direct question about infertility and childlessness is quite complex. However, an attempt has been made to define these two terms separately instead of using them synonymously as has been done in some of the literatures. The control variables have been cautiously selected to get some approximation about levels and patterns of infertility and childlessness in India by using NFHS-2 (1998-1999) and NFHS-3 (2005-2006) data. The study population is currently married women aged 20-49 years married for above 5 years. The age group 15-19 years has been removed deliberately from the analysis so that phenomenon of adolescent sterility does not dilute the findings for the study. Among this study population, total fertility rate, infertility rate and childlessness rate have been calculated. Interestingly, comparing total fertility rate and infertility rate, it can be stated that total fertility rate is low among those whose age at first marriage is above 18 years whereas infertility rate among this sub set of population is high compared to women whose age at first marriage is 18 years and below. Precisely it can be said that total fertility rate have negative relation and infertility rate has positive relation with age at first marriage. From this it can be concluded that with increase in age at first marriage, the capacity for women to bear children also decreases.

As it is obvious, rural areas have high total fertility rate but infertility rate is high among women in urban areas. This may be due to lifestyle, late age at first marriage that infertility rate among women in urban areas is high. When religion is considered, Muslims clearly depict that though total fertility rate is high, infertility rate is lowest. Castewise, it can be seen that scheduled tribe has high total fertility rate as well as high infertility rate. Another important aspect of the study is that, with increase in level of educational attainment among women, total fertility rate decreases, however, infertility rate increases. This can be related to the fact that with aspirations for attaining higher educational level, marriage is delayed as a result of which on one hand, total fertility rate is low mainly because of awareness about family planning methods and a conscious attempt to have small family for better living. On the other hand, in confirmation with aforementioned causation factors (higher age at marriage, urban living style etc.), infertility rate is high among this sub group of population. Standard of living has inverse relation with total fertility rate as well as infertility rate. Working women have low total fertility rate and high infertility rate.

Region wise analysis of infertility and childlessness states that regions with low total fertility rate have high infertility rate and vice versa. For example, south and west has low total fertility rate but have high infertility rate. This may be explained on the line of above mentioned factors. Eastern region has comparatively higher total fertility rate and infertility rate compared to central, northern and north eastern regions. Central and northern regions have high total fertility rate but low infertility rate.

Total fertility rate has shown an increasing trend in the study population whereas infertility rate has shown a decreasing trend. Can this be stated that because infertility rate is going down, total fertility rate is going up among currently married women aged 20-49 years married for above 5 years? The answer to this question could have been given through decomposition analysis but because the absolute change from NFHS-2 to NFHS-3 in rates of total fertility and infertility is marginal, such an exercise bears no meaning.

Childlessness which is defined as women who are currently married for more than 5 years, currently not pregnant, having no terminated pregnancy, never used contraceptives and have no living children portrays similar levels and patterns to that of infertility. However, not much explanation can be given about high infertility or childlessness rate among women with higher education or women belonging to low standard of living and likewise. Moreover, NFHS data do not give direct question on infertility or childlessness which poses a major drawback in explaining infertility and childlessness in proper context.



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**Table 1:** Total fertility rate (children per women) among currently married women aged 20-49 married for above 5 years, National Family Health Survey 1998-999 and 2005-2006

<b>Background characteristics</b>	<b>NFHS-2</b>	<b>NFHS-3</b>	<b>Absolute change</b>	<b>Relative change</b>
<b>Age At First Marriage</b>				
18 years and below	3.29	3.80	0.52	15.70
Above 18 years	2.58	2.39	-0.19	-7.26
<b>Place Of Residence</b>				
Urban	2.92	3.41	0.48	16.49
Rural	3.46	4.07	0.61	17.62
<b>Religion</b>				
Hindu	3.21	3.74	0.54	16.68
Muslim	4.28	4.84	0.57	13.21
Christian	3.27	3.44	0.17	5.27
Others	2.81	3.73	0.92	32.69
<b>Caste</b>				
Scheduled Caste	3.48	3.99	0.51	14.51
Scheduled Tribe	3.56	4.34	0.78	21.76
Others	3.27	3.83	0.56	17.13
<b>Education</b>				
No Education	3.67	4.35	0.69	18.71
Primary	2.96	3.48	0.52	17.47
Secondary	2.86	3.33	0.47	16.42
Higher	2.37	2.70	0.33	14.07
<b>Mass Media Exposure</b>				
None	3.95	4.72	0.77	19.58
Partial	2.88	3.59	0.71	24.64
Full	2.91	3.48	0.57	19.40
<b>Standard Of Living Index</b>				
Low	3.64	4.40	0.76	20.97
Medium	3.35	3.89	0.54	16.20
High	2.85	3.52	0.67	23.61
<b>Currently Working</b>				
No	3.56	4.14	0.58	16.31
Yes	2.99	3.47	0.48	16.11
<b>Regions</b>				
North	3.62	3.99	0.38	10.40
Central	4.29	5.00	0.71	16.61
East	3.29	3.96	0.67	20.51
North East	3.26	3.70	0.44	13.63
West	3.21	3.63	0.42	13.04
South	2.36	2.75	0.38	16.24
<b>Total</b>	<b>3.34</b>	<b>3.89</b>	<b>0.55</b>	<b>16.51</b>

**Table 2:** Primary infertility rate among currently married women aged 20-49 married for above 5 years, National Family Health Survey 1998-999 and 2005-2006

Background characteristics	NFHS-2		NFHS-3		Absolute change	Relative change
	Percent	Total women	Percent	Total women		
<b>Age At First Marriage</b>						
18 years and below	1.86	950	1.68	929	-0.18	-9.58
Above 18 years	2.54	357	2.35	435	-0.19	-7.54
<b>Place Of Residence</b>						
Urban	2.09	356	1.94	444	-0.15	-7.27
Rural	1.98	951	1.81	920	-0.17	-8.48
<b>Religion</b>						
Hindu	2.06	1103	1.86	1117	-0.21	-9.99
Muslim	1.61	129	1.75	168	0.14	8.64
Christian	1.95	31	2.03	33	0.08	4.03
Others	2.02	41	1.78	41	-0.25	-12.15
<b>Caste</b>						
Scheduled Caste	2.02	239	1.88	257	-0.15	-7.21
Scheduled Tribe	2.56	144	2.25	138	-0.31	-12.11
Others	1.95	919	1.81	940	-0.14	-7.13
<b>Education</b>						
No Education	2.16	801	1.81	691	-0.35	-16.04
Primary	1.62	180	1.75	198	0.13	8.02
Secondary	2.00	254	1.89	389	-0.11	-5.48
Higher	1.72	73	2.38	86	0.66	38.27
<b>Mass Media Exposure</b>						
None	2.05	572	1.79	363	-0.27	-13.04
Partial	1.98	596	1.84	780	-0.14	-7.26
Full	1.94	140	2.01	221	0.07	3.63
<b>Standard Of Living Index</b>						
Low	2.28	484	2.17	394	-0.11	-4.95
Medium	1.86	560	1.71	403	-0.15	-7.88
High	1.93	253	1.63	462	-0.30	-15.30
<b>Currently Working</b>						
No	1.86	735	1.74	766	-0.12	-6.70
Yes	2.23	572	2.02	596	-0.21	-9.39
<b>Regions</b>						
North	1.51	131	1.45	141	-0.07	-4.45
Central	1.97	292	1.67	291	-0.30	-15.27
East	2.12	306	1.65	275	-0.47	-22.33
North East	1.57	34	1.26	32	-0.31	-19.86
West	2.30	218	2.01	218	-0.29	-12.80
South	2.09	327	2.48	407	0.39	18.60
<b>Total</b>	<b>2.01</b>	<b>1308</b>	<b>1.85</b>	<b>1364</b>	<b>-0.16</b>	<b>-7.77</b>

**Table 3:** Childlessness rate among currently married women aged 20-49 married for above 5 years, National Family Health Survey 1998-999 and 2005-2006

Background characteristics	NFHS-2		NFHS-3		Absolute change	Relative change
	Percent	Total women	Percent	Total women		
<b>Age At First Marriage</b>						
18 years and below	2.83	1447	2.47	1361	-0.36	-12.84
Above 18 years	3.65	514	3.18	589	-0.48	-13.05
<b>Place Of Residence</b>						
Urban	3.03	516	2.62	596	-0.42	-13.73
Rural	3.00	1445	2.66	1354	-0.34	-11.35
<b>Religion</b>						
Hindu	3.09	1652	2.71	1625	-0.38	-12.41
Muslim	2.54	204	2.28	219	-0.27	-10.45
Christian	3.46	55	2.95	48	-0.51	-14.77
Others	2.37	48	2.39	55	0.01	0.62
<b>Caste</b>						
Scheduled Caste	3.07	362	2.64	361	-0.43	-13.95
Scheduled Tribe	4.09	230	3.61	218	-0.48	-11.76
Others	2.86	1346	2.56	1327	-0.30	-10.48
<b>Education</b>						
No Education	3.38	1252	2.71	1034	-0.66	-19.63
Primary	2.47	275	2.66	301	0.19	7.49
Secondary	2.59	329	2.52	521	-0.07	-2.70
Higher	2.50	106	2.61	94	0.11	4.42
<b>Mass Media Exposure</b>						
None	3.16	880	2.71	550	-0.45	-14.36
Partial	2.93	883	2.63	1113	-0.31	-10.45
Full	2.76	199	2.62	288	-0.14	-4.97
<b>Standard Of Living Index</b>						
Low	3.61	765	3.32	603	-0.29	-7.96
Medium	2.82	851	2.52	590	-0.31	-10.81
High	2.52	331	2.14	606	-0.38	-15.08
<b>Currently Working</b>						
No	2.78	1097	2.51	1110	-0.26	-9.41
Yes	3.37	864	2.85	838	-0.52	-15.52
<b>Regions</b>						
North	2.21	191	2.10	205	-0.10	-4.71
Central	3.03	449	2.43	424	-0.60	-19.72
East	3.20	462	2.55	425	-0.66	-20.49
North East	2.45	53	2.16	55	-0.29	-11.68
West	3.03	287	2.53	275	-0.50	-16.44
South	3.33	520	3.45	566	0.12	3.72
<b>Total</b>	<b>3.01</b>	<b>1962</b>	<b>2.65</b>	<b>1950</b>	<b>-0.36</b>	<b>-12.10</b>

**Table 4:** Factors determining infertility and childlessness among currently married women aged 20-49 married for above 5 years, National Family Health Survey 1998-999 and 2005-2006

Background Characteristics	Primary Infertility				Childlessness			
	NFHS-2		NFHS-3		NFHS-2		NFHS-3	
	Exp (β)	Significance level	Exp (β)	Significance level	Exp (β)	Significance level	Exp (β)	Significance level
<b>Age Of Women</b>								
20-24®								
25-29	0.69	0.00	0.51	0.00	0.59	0.00	0.51	0.00
30-34	0.51	0.00	0.38	0.00	0.45	0.00	0.41	0.00
35-39	0.39	0.00	0.38	0.00	0.39	0.00	0.37	0.00
40-44	0.40	0.00	0.36	0.00	0.40	0.00	0.35	0.00
45-49	0.43	0.00	0.36	0.00	0.44	0.00	0.37	0.00
<b>Age At First Marriage</b>								
18 years and below®								
Above 18 years	1.86	0.00	1.81	0.00	1.87	0.00	1.81	0.00
<b>Place Of Residence</b>								
Urban®								
Rural	0.82	0.01	0.92	0.27	0.80	0.00	0.92	0.18
<b>Religion</b>								
Hindu®								
Muslim	0.78	0.01	1.03	0.77	0.83	0.02	0.87	0.09
Christian	0.90	0.60	0.66	0.07	1.05	0.73	0.78	0.16
Others	1.11	0.52	1.14	0.45	0.92	0.60	1.05	0.73
<b>Caste</b>								
Scheduled Caste®								
Scheduled Tribe	1.21	0.09	1.31	0.02	1.29	0.00	1.45	0.00
Others	1.05	0.52	1.02	0.80	1.05	0.48	1.09	0.18
<b>Education</b>								
No Education®								
Primary	0.71	0.00	0.96	0.69	0.68	0.00	1.01	0.94
Secondary	0.74	0.00	0.96	0.65	0.62	0.00	0.87	0.07
Higher	0.48	0.00	1.20	0.23	0.48	0.00	0.88	0.37
<b>Mass Media Exposure</b>								
None®								
Partial	1.05	0.48	1.06	0.44	1.10	0.09	1.10	0.15
Full	1.11	0.43	1.03	0.83	1.24	0.05	1.08	0.45
<b>Standard Of Living Index</b>								
Low®								
Medium	0.89	0.11	0.80	0.00	0.87	0.01	0.76	0.00
High	1.03	0.78	0.72	0.00	0.87	0.13	0.64	0.00
<b>Currently Working</b>								
No®								
Yes	1.20	0.01	1.23	0.00	1.17	0.00	1.13	0.02
<b>Regions</b>								
North®								
Central	1.39	0.00	1.14	0.26	1.33	0.00	1.08	0.39
East	1.49	0.00	1.19	0.14	1.46	0.00	1.18	0.08
North East	1.05	0.82	0.84	0.45	1.05	0.76	0.99	0.95
West	1.49	0.00	1.30	0.03	1.31	0.01	1.13	0.23
South	1.42	0.00	1.75	0.00	1.47	0.00	1.63	0.00

®=Reference category; Dependent variable 1) Primary infertility=1, No=0; 2) Childlessness=1, No=0