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Unwanted Fertility Differentials of Nepalese Mothers

Tika Ram Aryal
Central Department of Statistics
Tribhuvan Uiversity, Kathmandu, Nepal
E-mail: traryal@gmail.com

ABSTRACT

This paper attempts to study unwanted fertility differentials of Nepalese mothers. Parity progression based techniques are used to estimate unwanted fertility of the Nepal Demographic and Health Survey data 2011. An estimate of unwanted total fertility rate was found to be 1.3 births per woman while wanted total fertility rate was 1.8 births per woman, and total fertility rate was 2.67 births per woman during 2009-11. About 31% of the births were accounted to be stated as unwanted births where 36% unwanted births in rural women and 25% urban women. The unwanted percentages were 28%, 38% and 41% respectively for Tarai, Hills and Mountains women. About 12% births were unwanted for educated mothers whereas 32% births were unwanted for illiterate mothers. Unwanted fertility is higher for poorest, illiterate, rural and Mountains women, which might be due to unmet need of contraception, its low use effectiveness, and getting early married as well as the lack of awareness among mothers. The findings may help research scholars, planners, policy-makers and social scientists for designing policy of a country.

Key words: Unwanted births, parity progression ratio, fertility rate, differentials, unintended pregnancy.

INTRODUCTION

The onset of fertility transition is widespread in most of the countries of Asia and Latin America, and has recently begun the transition in some countries in Africa where the recent rapidly declining patterns of fertility transition are mainly due to the changes in reproductive attitudes and behaviors among educated and well-off populations (Aryal & Subedee, 2011). It is well-known fact that in fertility transition, the most important prerequisites factors are considered as rising aspirations, changing in the functions of family, and rising costs of rearing and schooling of children, and which are expected to be associated with urban lifestyles (Aryal, 2002). The situation of developed countries with low birth rates have raised concerns about population decline, contraction in the size of the labor force, excessive levels of population ageing and erosion of overall population size and national influence in world affairs (Aryal, 2002; Keilman, 2006).

The reproduction process in human being normally takes place during teens of life; however, there is a big variation in childbearing process around the globe (Aryal, 2012; Riley *et al.* 1993). Fertility behavior among females is changing over time and numerous studies have been conducted all over the world (Diamond & Rutenberg, 1995; Vander, 1992). Unintended pregnancy rates remain high in the United States; with recent data showing that one-half of all pregnancies are unintended (Finer & Henshaw, 2006). Indeed, poor and less-educated women are more likely to have an unintended pregnancy than rich and more educated women; little is known about the role that discontinuation of contraception because of dissatisfaction plays in contributing to this disparity (Finer & Henshaw, 2006). A large proportion of unintended pregnancies are not solely the result of couples never having used birth control (Kost *et al.* 2008). An unintended pregnancy, consistency and failure also vary by race and education, with minority and less-educated women contraception less than white and more-educated women and black and poorer women experiencing much higher rates of contraceptive failure than white and more affluent women (Kost *et al.* 2008; Frost *et al.* 2007).

The unintended pregnancy rate for black women also has important implications for race differences in having more children than intended and the race differences between black and white women in the likelihood of overachieving fertility intentions (versus achieving intentions) were largely eliminated after accounting for experiencing births from pregnancies that the women themselves retrospectively called unwanted or mistimed (Guzzo & Hayford, 2011; Morgan & Rackin, 2010). The literature identifies striking race and education differences in the types of birth control used (Mosher & Jones, 2010). The high rate of contraceptive sterilization as a current form of birth control among black and less-educated women reflects the desire for a long-term method with a lower risk of failure (Borrero *et al.* 2010; Trussell, 2011).

Unwanted fertility is higher among the populations of

higher level of fertility rates as well as low levels of contraceptive practices (Aryal, 2005; Kulkarni & Choe, 1998; Riley *et al.* 1993). A reduction in unwanted births has important social, health and demographic consequences. Preventing unwanted births at the individual level enhances well being of women and their children whereas elimination of unwanted births at the societal level leads to substantial reductions in fertility and rate of population growth (Bongaarts, 1997; Kulkarni & Choe, 1998). A study of unwanted fertility and family planning impact on fertility is an important issue in determining useful tools or indicators for designing policy and planning to reduce the overall level of fertility in the country among different socio-economic setups populations (Kanitkar & Radkar, 2000; Pathak, 1998; UN, 1997, 1998).

Total fertility rate is a refined and reliable measure of fertility in a population and has recently been studied through parity progression ratios (PPR), which of course, reflect the tempo of cohort fertility (Aryal, 2006). This approach of measuring period fertility, called period parity progression ratio (PPPR), gives an additional advantage of looking at trends in TFR and facilitates in making comparisons separately regarding progression of a specific parity to higher order parity (Aryal & Subedee, 2011; Pandey *et al.* 1997).

In Nepal, total fertility rate declined from 4.6 births per woman in 1996 to 4.1 births per woman in 2001 to 3.1 births per woman in 2006 and to reach 2.6 births per woman in 2011. Infant mortality rate declined from 172 in 1971, to 117 in 1981 to 97 in 1991, to 64 deaths per 1000 live births in 2001 to 48 deaths per 1000 live births in 2006 and to 46 deaths per 1000 live births in 2011 (CBS, 2011; MOPH, 2011). Maternal mortality ratio was high in 1990s and it declined substantially from 830 in 1991, to 539 in 1996, to 281 in 2006 and 229 deaths per 100000 live births in 2011. The life expectancy of the population has substantially increased from 42 years in 1971 to 66 years in 2011 (Aryal, 2011; CBS, 2011; MOH, 2006; MOPH, 2011).

Preventing unwanted births at individual level enhances the well being of women and their children whereas elimination of unwanted births at the societal level leads to substantial reductions in fertility and rate of population growth (Bongaarts, 1997; Kulkarni & Choe, 1998). Bongaarts (1990, 1997) examined the level of unwanted fertility using data from 48 World Fertility Survey and Demographic and Health Survey and he found that the proportion of unwanted births was high in countries with intermediate level of fertility.

Most commonly used measures of unwanted fertility have relied heavily on the reported ideal number of children or the reported wanted status of recent births. As Bongaarts (1990) pointed out that it underestimates actual level of unwanted fertility and consequently he introduced a measure to estimate the unwanted fertility using information on desire for more children, which is conceptually a complicated procedure (Kulkarni & Choe, 1998). A study reported the wanted TFR of 2.9 against the total fertility rate of 4.6 births per woman in 2006 in Nepal (MOH, 1997) based on the data of ideal family size if all unwanted births were avoided. Likewise, the level of wanted fertility was 1.8 against the total fertility rate of 2.6 births per woman in 2011 (MOPH, 2011).

Measuring the level of unwanted fertility accurately and identifying the factors associated with variations in unwanted fertility provide valuable information to policy-makers concerned with the welfare of women and children and reduction in fertility (Kanitkar & Radkar, 2000; Morgan & Rackin, 2010). A number of studies reported that unwanted births constitute 20 to 30 per cent of total births in recent years in most of the developing countries (Bankole & Westoff, 1995; UN, 1987). It is pointed out that the parity progression-based wanted TFR may be free from biases due to rationalization which uses information on whether a woman wants another child or not (Bongaarts, 1990; Kulkarni & Choe, 1998). In this context, the aim of this paper is to study the differentials of unwanted fertility of Nepal by using the data of Nepal Demographic Health Survey (NDHS) 2011.

MATERIALS AND METHODS

Data

This paper uses the extracted data from Nepal Demographic and Health Survey (NDHS) 2011. The 2011 NDHS collected demographic and health information from a nationally representative sample of 10,826 households, which yielded completed interviews with 12,674 women age 15-49 in all selected households (MOPH, 2011). In survey, one more individual questionnaire was used to collect information on birth histories, ideal family size, wanted more child and unwanted children etc. The reference date of the survey was taken as Chaitra 2068 (as of April, 2011) so that births occurred after this date has been excluded in this analysis.

Estimation of unwanted fertility

Unwanted births are those for which women reported that right before they became pregnant, they did not want to have any births at any point in the future (a number failure), while mistimed births are those identified as occurring any time earlier than desired (a timing failure). Unintended births are then the sum of all births identified as unwanted or mistimed (Guzzo & Hayford, 2011). Measurement of unwanted

fertility through indirect techniques has received great attention of demographers. Kulkarni and Choe (1998) used parity progression based measures to estimate unwanted fertility. This procedure is applied to estimate the unwanted fertility for Nepal. Their procedure and adjustment to it are as follows. Details may be found in Kulkarni and Choe (1998).

Let P(i) be the period parity progression ratios for women of parity i, and W(i) be the unadjusted wanted parity progression ratio for women of parity i, which is calculated as the proportion of women of parity i who want at least one more child. The wanted fertility can be computed from the set of W(i). The result, however, will not be an accurate measure of wanted fertility because the denominator of W(i), which consists of all women of parity i, includes women who already have borne some unwanted children. Thus, it is necessary to adjust the denominator to obtain the proportion of women who want more children among those who have no unwanted children.

If R(i) be the proportion of women reaching parity i in an assumed cohort, then

R(0)=1, and

$$R(i) = R(i-1)P(i-1) \;\; i > 0 \quad \text{.....(1)}$$

where P(i-1) be the period parity progression ratios for women of parity (i-1).

Let $R^*(i)$ be the proportion of women who want to reach parity i, so that

$R^*(i) = 1$, and

$$R^*(i) = R(i-1)W(i-1) \;\; i > 0 \quad \text{..... (2)}$$

where W(i-1) be the unadjusted wanted parity progression ratio for women of parity (i-1).

The adjustment factor, A(i) can be written as

$$A(i) = \frac{R^*(i)}{R(i)} \quad \text{..... (3)}$$

and W(i) can be adjusted as

$$W^*(i) = \frac{W(i)}{A(i)} \quad \text{..... (4)}$$

Using the value of adjusted wanted parity progression ratio, the wanted total fertility rate can be obtained as

$$\text{WTFR} = W^*(0) + W^*(0)W^*(1) + W^*(0)W^*(1)W^*(2) + \ldots \quad (5)$$

Finally, an unwanted total fertility rate (UWTFR) may be obtained by taking the difference between TFR and WTFR i.e.

UWTFR = TFR - WTFR ..... (5)

TFR is the total fertility rate and WTFR is the wanted total fertility rate.

RESULTS AND DISCUSSION

The estimates of total fertility rate (TFR), wanted total fertility rate (WTFR) and unwanted total fertility rate for the period of three years preceding the survey date i.e. 2008-11 according to the characteristics of mothers are given in the Table 1. An estimate of UWTFR was found to be 1.3 births when WTFR was 1.8 births per woman and TFR was 2.67 births per woman by PPR during 2008-10. About 31 per cent of the births were found to be stated as unwanted births included in the survey date i.e. 2008-11. This is consistent with the findings of several studies among developing countries as well as underdeveloped

countries which reported unwanted births to be around 20 to 30 per cent of the total births in recent years (Bankole & Westoff, 1995; Feeney & Yu, 1987).

Wanted total fertility rate was found to be higher (by about a child) among rural women (1.8 births per woman) than that of urban women (1.2 births per woman). The TFRs for rural and urban women were 2.8 and 1.6 births per woman respectively. The unwanted births were accounted to be 36 per cent among rural women and 25 per cent among urban women. Similarly, the percentage of unwanted TFR was found to be 28, 38 and 41 per cent respectively among women of Tarai, Hills and Mountains. The unwanted birth was found to be higher among Mid-western (43.75%) and followed by Far-western (35.70), Western (32.0%), Central (32.0%) and Eastern (28.0%) development regions. A strong negative relationship between wanted fertility and education can be observed. A low level of WTFR was found among educated women whereas UWTFR was found higher among illiterate women. A lower amount of unwanted birth among educated and urban women may be due to motivation and ability to use contraception by women who do not want more children. Percentage of unwanted births was found to be 11.8 among educated women whereas it was 32 per cent among uneducated mothers, which imply that as increasing the levels of education the less chance to have unwanted births among Nepalese mothers. The UWTFR was found to be highest among women residing in Mountains (1.4 births per woman) followed by Hills (1.0 births per woman) and Tarai (0.7 births per woman) whereas the WTFR (TFR) was found to be 2.0(3.4) births per woman, 1.6(2.6) births per woman and 1.8(2.5) births per woman for women residing in Mountains, Hills and Tarai belts respectively.

Table 1 Wanted and unwanted total fertility rate according to the characteristics of women NDHS (2008-11)

Characteristics	Obs. TFR	Estimated TFR		% of UTFR
		WTFR	UWTFR	
Residential status				
Urban	1.6	1.2	0.4	25.00
Rural	2.8	1.8	1.0	35.71
Ecological belt				
Mountain	3.4	2.0	1.4	41.18
Hill	2.6	1.6	1.0	38.46
Tarai	2.5	1.8	0.7	28.00
Development region				
Eastern	2.5	1.8	0.7	28.00
Central	2.5	1.7	0.8	32.00
Western	2.5	1.7	0.8	32.00
Mid-western	3.2	1.8	1.4	43.75
Far-western	2.8	1.8	1.0	35.71
Schooling				
No education	3.7	2.5	1.2	32.43
Primary	2.7	1.9	0.8	29.63
Some secondary	2.1	1.6	0.5	23.81
SLC and above	1.7	1.5	0.2	11.76
Economic status				
Poorest	4.1	2.1	2.0	48.78
Poor	3.1	2.0	1.1	35.48
Middle	2.7	2.0	0.7	25.93
Rich	2.1	1.6	0.5	23.81
Richest	1.5	1.2	0.3	20.00
Total	**2.6**	**1.8**	**0.8**	**30.77**

UTFR was found to be 1.2 births among illiterate mother whereas it was .2 births per woman among women of SLC and above education. The unwanted fertility level was found to be decreased with increased level education where the unwanted birth was found to be higher among illiterate women (32.43%) and followed primary (29.63%), some secondary (23.81%) and SLC and higher education (11.76%), which implies that with a increase in educational level with less chance to have unwanted births and thereby decreased levels of wanted fertility and total fertility rates. Total fertility rates were found to be 3.7, 2.7, 2.1 and 1.7 births per women respectively for uneducated, primary educated, some secondary educated and SLC and above educated women whereas wanted TFR respectively was found to be 2.5, 1.9, 1.6 and 1.5 births per women.

UTFR was found to be 2 births among poorest mother whereas it was .3 births per woman among richest mothers. The unwanted fertility level was found to be decreased with increased level of economic status of mothers where the unwanted birth was found to be higher among poorest women (48.78%) and followed by poor (35.48%), middle (25.93%), rich (23.81%) and richest (20.0%), which implies that with a increase in economic quintile groups with less chance to have unwanted births and thereby decreased levels of wanted fertility and total fertility rates. Total fertility rates were found to be 4.1, 3.1, 2.7, 2.1 and 1.5 births per women respectively for poorest, poor, middle, rich and richest women whereas wanted TFR respectively was found to be 2.1, 2.0, 2.0, 1.6 and 1.2 births per women. A higher unwanted fertility among women of poorest, illiterate, rural and Mountains region might be due to the unmet need of contraception and its low use effectiveness, getting early marriages and lack of awareness about unwanted fertility as well as a large number of births.

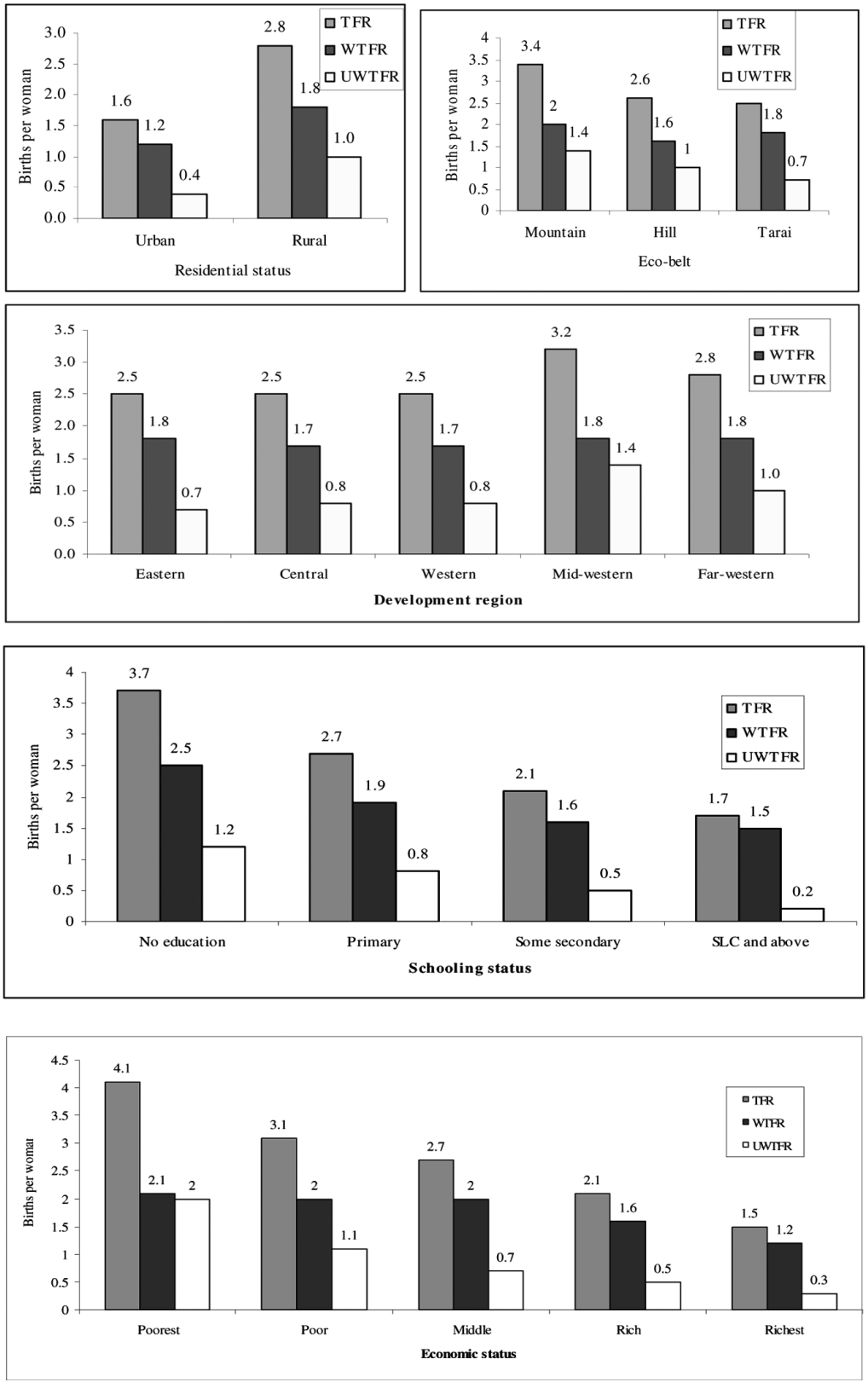

Fig. 1. Wanted, unwanted and TFR by characteristics of mothers

CONCLUSION

Unwanted total fertility rates have been computed according to characteristics of women. An estimate of UWTFR was found to be 1.3 births when WTFR was 1.8 births per woman and TFR was 2.67 births per woman during 2008-10. About 31 per cent of the births were found to be stated as unwanted births. The unwanted births were accounted to be 36 per cent among rural women and 25 per cent among urban women. Similarly, the percentage of unwanted TFR was found to be 28, 38 and 41 per cent respectively among women of Tarai, Hills and Mountains. A strong negative relationship between wanted fertility and education can be observed where UWTFR was found higher among illiterate women. Percentage of unwanted births was found to be 11.8 among educated women whereas it was 32 per cent among uneducated mothers, which imply that as increasing the levels of education the less chance to have unwanted births among Nepalese mothers. The unwanted fertility level was found to be decreased with increased level of economic status of mothers. A higher unwanted fertility among women of poorest, illiterate, rural and Mountains region might be due to the unmet need of contraception and its low use effectiveness, getting early marriages and lack of awareness.

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