

Analyzing the risks of non-live births among women since last one decade in India

Introduction

Pregnancy outcomes can be classified in two types as live births and non-live births. Non-live births and adverse pregnancy outcomes uses in synonyms terms. Adverse pregnancy defined as outcome of pregnancy that are not in favor of women and child. Adverse pregnancy outcomes includes stillbirth, miscarriage, abortion, preterm births and low birth weight. Non-live births is a type of adverse pregnancy outcomes and it's a collective term used to describe pregnancies that failed to produce a live birth (Taft and Watson, 2007). Further, non-live births includes as the termination of pregnancies in terms of miscarriage, stillbirth and abortion (IPS, ICF Macro, 2015-16).

Reproductive health is an important issue, especially in women of childbearing age. In the most developed countries, pregnancies are planned, complications are few and outcomes are generally favorable for both mother and infant. Adverse outcomes are far more frequent in the developing world. The most severe adverse outcome of pregnancy is the death of the mother or her offspring. Maternal death has become an extremely rare event in the developed world, with many countries reporting maternal mortality ratios of 5–10 per 100,000 live births. In the least developed countries, the ratios are 100 times higher (Rosenfielda and Maine, 1985, AbouZhar and Wardlaw, 2001).

Relatively little is known about the risk factors underlying the continued increase in these adverse outcomes (Anderson et al, 2006). Among all non-live births, miscarriage is the most common negative pregnancy outcome (Enguidanos et al, 2002) whereas stillbirth is characterized as the loss of pregnancy due demise of the fetus in the uterus before birth at or following 28 weeks' gestation and losses can occur anytime during the course of pregnancy. A review conducted by Rajaratnam et al. reported that stillbirth is declining in India but failed to achieve millennium development goal's target on stillbirth.

Objective of the study

The objective of the study to analyze the risk factors associated with non-live birth (stillbirth, miscarriage and abortion) among women in India.

Data and Methods

Present study used the data from the third (2005-06) and fourth (2015-16) round of the National Family Health Survey (NFHS). The National Family Health Survey provides information on population, health, and nutrition for India and each state and union territory. All four NFHS surveys have been conducted under the stewardship of the Ministry of Health and Family Welfare (MoHFW), Government of India. The survey provides state and national level estimates of demographic and health parameters as well as data on various socioeconomic and program dimensions, which are critical for implementing the desired changes in demographic and health parameters

Using NFHS-3 and NFHS-4 data, we compared non-live birth on the basis of demographic and maternal characteristics of women in India. Using multiple logistic regression, we have shown the risk factors of stillbirth, miscarriage and abortion among women for last birth in last five years.

Results and Discussion

Prevalence of non-live birth by demographic and maternal characteristics

The prevalence of non-live births has decreased from 11 percent to 10 percent in last 10 years of period. Age of mother at a time of childbearing is an important determinant of non-live birth. For instance, most of the non-live birth occurred at 20-24 years at the time of childbearing as 12 percent and 11 percent non-live birth reported in the same age group in NFHS-3 and NFHS-4 respectively. Some another important determinants of non-live births are mother's education and wealth index. For example, 10 percent non-live births reported among illiterate women (NFHS-3) and this figure has decreased to 9 percent in NFHS-4 for the same category. Richest women are more vulnerable for non-live births as data revealed 14 percent (NFHS-3) and 12 percent (NFHS-4) non-live births reported among richest wealth quintile compared with 9 percent and 8 percent in NFHS-3 & 4 respectively among poorest wealth quintile.

Births performed at home reported higher proportion of non-live birth compared with hospital's delivery. The data shows that there is no differences of non-live births among smokers and non-smokers. Birth interval between two children is an important determinants for non-live birth as women who had no birth interval in their children having higher percentage of non-live births. For example, 14 percent and 13 percent non-live reported for no birth interval in NFHS-3 and NFHS-4 respectively whereas this figure is goes down with increase in birth interval. Further, first parity women having higher prevalence of non-live births compared with 2 or more parity women.

Multiple logistic regression of stillbirth, miscarriage and abortion

Results from multiple logistic regression shows that higher odds ratio for stillbirth among middle age group as in 20-24 years (OR= 1.17) compared with lower and higher age groups. Women with higher education shows lower risk of stillbirth compared with illiterate women. The odds of stillbirth is twice among smokers (OR=2.72) than non-smokers. Fifteen percent more likely to chance of miscarriage among women using tobacco than non-users. Age at birth, mother's education, types of delivery, pregnancy intension and ante natal checkups are some important determinants identified for the abortion.

Table

Table: Odds ratio of non-live births (stillbirth, miscarriage and abortion) among women in India, 2015-16

Background						
Characteristics	Stillbirth		Miscarriage		Abortion	
	Odds Ratio	CI at 95%	Odds Ratio	CI at 95%	Odds Ratio	CI at 95%
Age at birth						
<20	1		1		1	
20-24	1.17	0.91-1.47	1.02	0.93-1.12	0.936	0.80-1.09
25-29	1.19	0.92-1.53	0.94	0.85-1.04	0.974	0.82-1.15
30-35	0.93	0.69-1.23	0.78***	0.69-0.88	0.924	0.76-1.11
35+	0.65**	0.43-0.99	0.68***	0.57-0.82	0.72**	0.55-0.95
Mother's education						
Illiterate	1		1		1	

Primary	0.97	0.80-1.15	1.13**	1.04-1.24	1.29***	1.12-1.49
Secondary	0.67***	0.57-0.79	1.07**	1.00-1.15	1.39***	1.23-1.58
Higher	0.59**	0.38-0.89	1.04	0.93-1.16	1.26**	1.05-1.51
Place of residence						
Urban	1		1		1	
Rural	1.20	0.97-1.46	1.00	0.92-1.07	0.75***	0.67-0.85
Religion						
Hindu	1		1		1	
Muslim	1.39***	1.14-1.68	1.09**	1.01-1.19	0.951	0.83-1.08
Others	0.68**	0.45-1.01	0.90	0.78-1.03	0.843	0.66-1.07
Caste						
SC/ST	1		1		1	
OBC	1.01	0.88-1.16	1.08*	1.01-1.15	1.015	0.90-1.14
Others	0.98	0.76-1.24	1.15***	1.05-1.25	1.094	0.93-1.27
Wealth index						
Poorest	1		1		1	
Poorer	0.91	0.77-1.07	1.11***	1.02-1.20	1.40***	1.22-1.61
Middle	0.78*	0.65-0.94	1.09**	0.99-1.19	1.70***	1.47-1.97
Richer	0.76**	0.59-0.98	1.12**	1.01-1.24	1.72***	1.46-2.01
Richest	0.78	0.57-1.05	1.24***	1.10-1.39	1.64***	1.32-2.03