

Inequalities in Contraceptive use among Female Adolescents in South Asian Countries: A Decomposition Analysis

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Extended Abstract

Background

Contraceptive knowledge and use has been an emerging topic of interest among adolescents in Asia. Adolescents aged 10–19 comprise over one-fifth of South Asia's population. South Asia and Asia have many similarities and differences in common; evidences of which is provided by a study by (Pachauri & Santhya, 2002) stating that countries in South Asia (except Sri Lanka) are characterized by early marriage, and early childbearing within marriage is prevalent in both regions. Adolescents also appear to have lower use and higher unmet need for contraception, poorer knowledge of family planning and less access to information and services than older women (Kennedy et al., 2011). The evidence of low contraceptive prevalence among South Asian adolescents is plenty; although awareness of contraception is almost universal among married adolescents, knowledge of specific methods and sources of supplies is limited (Pachauri & Santhya, 2002). Adolescent women are less likely to be knowledgeable about family planning than are adult women, and they are much less likely than are adult women to be practicing contraception; in addition, compared with adult women, contraceptive use among adolescents is more likely to result in an undesirable outcome—an unplanned pregnancy or an unmet need for a method. Many studies across south Asia have been conducted pertaining to this issue. One such study based in Nepal revealed that many adolescents in Nepal lack the power and skill to use contraceptives, especially young women who must negotiate the use of condoms with a male partner (Jha et al., 2010). In 1995, Bangladesh Rural Advancement Committee set up an initiative of providing sexual and reproductive education among adolescents' through local schools and community libraries (Matters, 2018). Despite this, the percentage of adolescents not using any contraceptive is high in Bangladesh. A study in Pakistan by (Economics, 2018) shows an important cause of large gap between intended and actual births is the low Contraceptive Prevalence Rate in the country, the reasons for which have been widely discussed in a number of studies, i.e., the socio-cultural values and gender inequality issues. The family planning programmes have a major role to play in contraceptive use and prevalence among adolescents. Clients who have more contacts with the family planning program use contraceptives more consistently than those with fewer contacts. (Brindis et al., 2015).

The present study highlights the demographic dimensions of the sexual and reproductive health of female adolescents in Asia in purview of contraceptive use. Contraceptive use is noticeably lower among the adolescents with high levels of unmet need. The study not only explores the important predictors of contraceptive use among adolescents but also manages to analyse the underlying inequalities in contraceptive use among female adolescents in selected four south Asian countries.

Data and Methods

The nationally representative Demographic Health Survey (DHS) data from four South Asian countries has been used for the analysis. The countries included in the analysis are India, Nepal, Bangladesh and Pakistan. These countries were selected because of the highest amount of adolescent population in these countries. The latest datasets for each country was included in the analysis. The survey provides data on different dimension of women's sexual and reproductive health for the reproductive age group 15-49 across states and districts of India. The focus of analysis was towards contraceptive use among currently married female adolescents. The final sample size for each country are 94,034 (India), 5074 (Bangladesh), 2474 (Nepal) and 2569 (Pakistan).

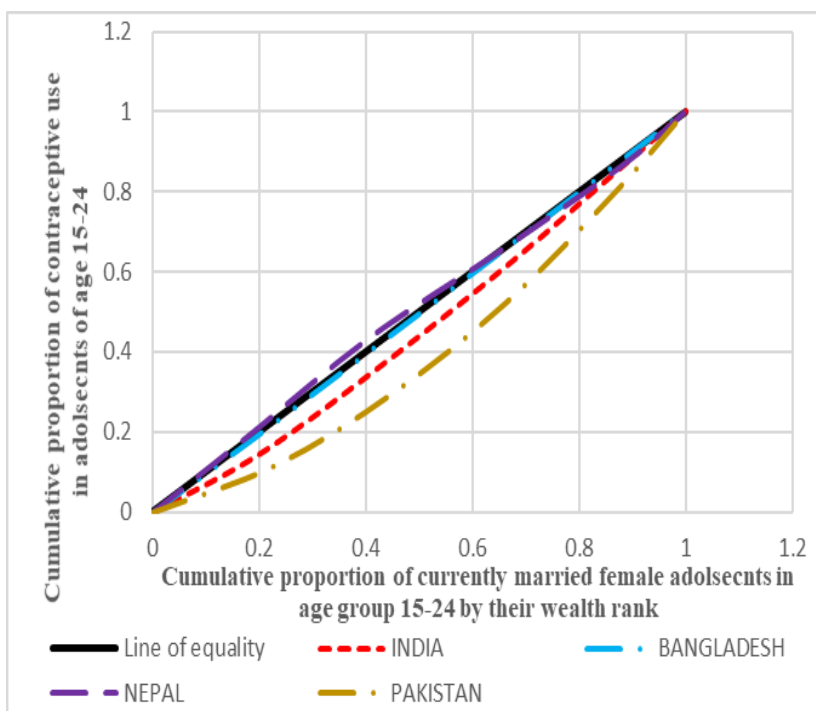
The dependent variable of the study is *modern contraceptive use* which includes the percentage of modern method of contraception used by currently married adolescents aged 15-24. Modern methods include male and female sterilization, injectables, intrauterine devices, contraceptive pills, implants, female and male condoms, diaphragm, foam/jelly, the standard days method, the lactational amenorrhoea method, and emergency contraception. The explanatory variables included many variables reflecting socio- economic as well as some behavioural characteristics. The variables were used on the basis of many earlier and recent studies. The variables were kept same for all the four South Asian countries for a better comparative analysis. The variables included in the analysis were age, place of residence, education, religion, wealth index, working status, age at first sex, number of living children, husband's education, media exposure, visit by FP worker.

To analyse the contraceptive use among currently married adolescents in South Asian countries by their socio- economic characteristics, bivariate analysis was done. It has been followed by Logistic regression which helps us to assess the effects of the socio-economic characteristics on the contraceptive use among adolescents. Inequality measures have been the most convenient way of analysing the inequalities in health and related areas. The concentration index and related concentration curve provide a means of quantifying the degree of income-related inequality in a specific health variable. A concentration curve that lies above the line of equity represents a situation where poor maternal health care utilization is more concentrated among the 'disadvantaged' population (Goli et al., 2017). The amount of contribution of each factor influencing inequality cannot be obtained by these measures. To overcome this problem, Wagstaff (2003) gave an inequality decomposition model for assessing inequalities which has been employed here.

Results

The logistic regression recognised education, religion, wealth, work status, age at first sex, number of living children, media exposure, visit by FP worker as significant predictors affecting the contraceptive use among female adolescents. Here, age and place of residence lost the significance as predictors affecting the contraceptive use. Higher education was associated with a drastic (India: 1.37*(1.06,1.57), $p=0.005$; Bangladesh- 1.85*(1.36,2.51), $p=0.005$; Pakistan- 2.3*(1.54,3.43), $p=0.005$; Nepal- 1.42(0.92,2.2), $p=0.052$) increase in the contraception use among female adolescents in all four countries. Female adolescents who belonged to Muslim (India-0.54*(0.43,0.68); Bangladesh, 0.93(0.74,1.17) and Nepal, 0.31*(0.16,0.62)) and other religion were having lower likelihood of using contraception in all countries except for Pakistan where the data on religion was not available. Wealth did not appear as a significant predictor of contraceptive use in Bangladesh and Nepal. Whereas, in India and Nepal, being wealthy was associated with manifold increase in contraceptive use (India: 2.41*(2,2.9) and Nepal:

1.54*(1.02,2.34)). Adolescents who were currently working were significantly more likely to use contraception in India (1.24*(1.09,1.41)), Bangladesh (1.63*(1.39,1.9)) and Nepal (1.36*(1.1,1.68)). Those adolescents who have initiated the sexual union after age 15-17 were significantly associated with reduction of contraceptive use in India (0.73*(0.61,0.86)) Nepal (0.68*(0.49,0.95)) when compared to the younger age group (≥ 14). Having one or more than one children was associated with manifold increase in contraceptive use than those who do not have any child ((India: 10.27*(8.84,11.92)), Bangladesh: 8.07*(6.48,10.06), Pakistan: 66.77*(20.73,215.09), Nepal: 6.68*(4.6,9.69)). Being exposed to media (radio, television and newspaper) was related to significant increase in contraceptive use among adolescents in all the four countries (66 % (1.45,1.89), 24% (1.07,1.45), 68% (1.1,2.55) and 68% (1.2,2.37) in India, Bangladesh, Pakistan and Nepal respectively). Similarly, visit by FP worker in last 12 months was significantly associated (Bangladesh: 1.26*(1.09,1.47), Pakistan 1.33*(1,1.78), and Nepal 1.26*(1.02,1.55)) with increase in contraceptive use in all countries in the analysis.



Contraceptive use among currently married female adolescents gets affected through many factors. The decomposition analysis has been carried out in order to determine the contribution various socio-economic and demographic factors in the inequality in contraceptive use among the adolescent population. The results of the inequality analysis for the India, Bangladesh, Nepal and Pakistan have been explained here. In case of India, age group 15-19 (45% to the explained part of inequalities), illiteracy of the respondents (30%), and birth order (28%) contributed maximum in explaining the inequality in

contraceptive use among female adolescents. The highest elasticities were observed with respect to age (0.114) and illiteracy (0.077). For Bangladesh, the largest contributors to inequalities in contraception were illiteracy (22.85%), age (18.41%) and birth order 3+ (15.78). Alike India, the highest elasticities were found with respect to illiteracy (0.057) and age (0.046) birth order 3+ contributed to 24.02% of the inequalities among adolescents in Pakistan, followed by illiteracy (14.38%) and poor economic status (9.87%). Highest elasticities were observed with birth order 3+ (0.060) and illiteracy (0.036). In Nepal, the important operators of inequalities in contraceptive use among female adolescents were age (33.02%), illiteracy (24.32%) and illiterate partner (16.09%). Highest inequalities were found with age (0.082) and illiteracy (0.060). overall, India and Bangladesh displayed a similar pattern where age, illiteracy and birth order 3+ were significantly the highest contributors in inequalities in contraception. The negative values of concentration index reflected that factors like unemployment, birth order 3+, and vulnerable age at sex were more concentrated among the socially disadvantaged population.

Discussion and Conclusion

The study explored the important predictors of contraceptive use among adolescents in sample of four Asian countries. Although the knowledge of contraception was high in these countries, the use of contraception remained low. Factors like education, employment, having one or more children, media exposure were positively associated with contraceptive use among adolescents in all the four countries. However, age and contraceptive use were not significantly associated with each other, which was found in accordance with many other studies as well. (Marrone et al., 2017). Adolescents who were visited by FP worker in last 12 months were more likely to use contraceptives which is tune with a previous study which anticipated that adolescents with more frequent contacts with the family planning program have higher use of contraceptives (Brindis et al., 2015). Coming to the inequality analysis, Pakistan showed the greatest socio-economic inequality in contraceptive use, followed by India. While Nepal showed a better picture with lesser socio-economic inequality, Bangladesh depicted no socio-economic inequality in contraceptive use. Among all the socio-economic factors taken in the analysis, the major contributing factors to socioeconomic inequality in contraceptive use vary by country. In case of India and Bangladesh, age, illiteracy and birth order 3+ contributed most to the inequality. Somehow India and Bangladesh depicted a similar pattern, whereas, in Pakistan, it is illiteracy, age and birth order3+ and poor economic status. Age, illiteracy, illiterate partner were the factors that contributed the bulk of inequalities in contraceptive use in Nepal. This proves social and economic constraints in accessing services and inadequacies in health care system is still a major issue of concern in these Asian countries (Economics, 2018).

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Table 1 Effect and Contribution of predictor variables of modern contraceptive use among female adolescents based on Decomposition analysis in selected South Asian countries

INDIA, N= 94034				
Predictor	Elasticity	C.I.	Absolute	% Contribution
15-19 age	0.114	0.014	0.006	45.82
Rural place of residence	-0.022	-0.064	0.005	-8.91
Poor economic status	0.022	0.446	0.039	8.92
Illiterate	0.077	0.092	0.028	30.93
Unemployed	0.004	-0.138	-0.002	1.69
Illiterate partner	0.008	0.062	0.002	3.32
Vulnerable age at first sex	-0.039	0.118	-0.018	-15.64
Birth order 3+	0.071	-0.090	-0.025	28.42
Total				94.57
BANGLADESH, N=5074				
15-19 age	0.046	0.009	0.001	18.41
Rural place of residence	-0.154	-0.064	0.039	-61.91
Poor economic status	-0.001	0.260	-0.001	-0.69
Illiterate	0.057	0.098	0.022	22.85
Unemployed	0.021	-0.088	-0.007	8.66
Illiterate partner	-0.010	0.072	-0.002	-3.98
Vulnerable age at first sex	-0.015	0.180	-0.011	-6.18
Birth order 3+	0.039	-0.168	-0.026	15.78
Total				-7.07
PAKISTAN, N=2569				
15-19 age	0.010	0.013	0.000	4.21
Rural place of residence	-0.046	-0.081	0.015	-18.58
Poor economic status	0.024	0.450	0.044	9.87
Illiterate	0.036	0.320	0.046	14.38
Unemployed	0.003	-0.357	-0.004	1.36
Illiterate partner	-0.001	0.137	-0.000	-0.46
Vulnerable age at first sex	NA	NA	NA	NA
Birth order 3+	0.060	-0.038	-0.009	24.02
Total				34.80
NEPAL, N=2474				
15-19 age	0.082	0.014	0.004	33.02
Rural place of residence	-0.061	-0.049	0.012	-24.51
Poor economic status	-0.005	0.404	-0.009	-2.32
Illiterate	0.060	0.009	0.002	24.32
Unemployed	0.029	-0.175	-0.020	11.61
Illiterate partner	0.040	0.011	0.001	16.09
Vulnerable age at first sex	0.002	0.094	0.001	1.03
Birth order 3+	0.038	-0.070	-0.010	15.35
Total				74.60

