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Determinants of Unmet Need for Contraception among Currently Married Women in Oromia National Regional State; Evidence from Ethiopia Demographic and Health Survey Data

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Abstract: ***Context**: Sub Saharan African countries lag behind the remaining of world in contraceptive prevalence rate (CPR). The level of unmet need for contraceptionwas also highest for the region. Being part of the region, Ethiopia is not an exception to this situation. **Methods**: This study was carried out using quantitative data obtained from the 2005 Ethiopia Demographic and Health Survey (EDHS).To analyze the data both bivariate and multivariate techniques of data analysis were applied. Chi square test was employed to see association between each predictive and outcome variable. Logistic regression was also fit to identify determinants of unmet need for contraception using Statistical Package for Social Scientists (SPSS Ver.16). **Results**: The level of unmet need for contraception in the study area (i.e.41.3%) is greater than the national average (34%).The logistic regression model depicts, among other variables, number of living children, spousal communication, visit of a health facility, discussion with health extension workers, age and ethnicity are determinants of unmet need for family planning. **Conclusion**: Number of living children that women have increases the likelihood of unmet need among women. Conversely, discussion with health extension workers and husbands, increasing age of women, and women's visit of health facility where family planning is integrated in to Maternal and Child Health (MCH) reduce the chance of having unmet need for contraception among women. Finally, the study recommends that women in their lower reproductive age should be given top priority. Moreover, Maternal and Child Health (MCH) program should be expanded to areas where it is absent and family planning programmers should exert due effort to encourage males to discuss with their wives about family planning and take part in contraceptive use.*

Keywords: Determinants, Unmet need, Family planning, Contraception and Demography

1. Introduction

Worldwide since the 1960's the percent of married women using contraception has steadily increased (PRB, 2006; UN Population Division, 2005). Owing to this, since the early 1990's more than half of all married women in the world were using some form of contraception (Prata, 2007). Because of increased use and practice of contraception, in both developed and some developing countries fertility has declined and still declining. For instance, the total fertility rate of South Korea fell from an average of six children in 1960 to an average of 1.7 during the 1998. Moreover, in Columbia total fertility fell from 6 to 3.5 in only 15 years after contraceptives become widely available in 1968 (Potts ,2000). Similarly, some African countries have also achieved such reduction in their total fertility rate. This situation is particularly true for southern African countries (i.e. South Africa, Swaziland, Lesotho, Botswana and Namibia) and North Africa (Prata, 2007). For instance, the total fertility rate of Egypt declined from 5.3 in 1980 to 3.6 in 1995 (EGDHS, 1998) and currently the total fertility rate of Egypt is as low as 3.1 (PRB, 2007).

Despite over all progress, enormous differences exist between countries and regions of the world regarding contraceptive use and the corresponding fertility decline. Unlike other regions of the world, Sub Saharan Africa shows the lowest contraceptive use and high level of fertility globally. In relation to this (Bongarts, 1994; Westoff and Bankolle, 1995) confirmed that, after nearly three decades of family planning programming in the region, fertility levels remain, for the most part, unchanged although substantial members of women continue to indicate a preference towards lowering their levels of childbearing. Recent reports also indicate similar result for the region. Using data from Demographic and Health Surveys (Sdegh, et.al, 2007) reported that between the periods 1990 to 1995 and 2000 to 2005, unmet need for family planning declined only by 2% in Sub Saharan Africa and reached 24%. However, in other regions of the developing world including Latin America and the Caribbean, North Africa and West Asia, and south and south East Asia more progress has been made and unmet need has fallen between 4% and 7%.

In Ethiopia the level of unmet need for contraception was 36% during the year 2000 (CSA and ORC Macro, 2001). Between the years 2000 to 2005 the level of unmet need was 34% without showing significant deviation from the previous quantity (CSA and ORC Macro, 2006). Moreover the contraceptive prevalence rates were 8% and 15% during the years 2000 and 2005 respectively. This condition shows that the level of unmet need was even higher than the average value for the whole Sub Saharan Africa which was at 24%. In addition to this, Ethiopia shows great variation in its level of unmet need between and among its different regions. Table 1 below shows these variations in the level of unmet need for contraception among different regions of Ethiopia

Table1: Percentage of Currently Married Women with Unmet Need, Met need and Total Demand for Family Planning, Ethiopia 2005

Region	Unmet need for Family planning	Total demand for family planning	Percentage of demand satisfied
Tigray	24.1	40.7	40.9
Afar	13.4	20.0	33.0
Amhara	29.7	46.0	35.4
Oromia	41.3	55.2	25.0
Somali	11.6	14.8	21.3
Benishangul Gumuz	29.7	41.1	27.7
SNNPR	37.4	49.6	24.6
Gambella	23.5	39.6	40.7
Harari	22.4	56.2	60.2
Addis Ababa	10.3	68.2	84.8
Dire Dawa	14.8	48.2	69.8

***Source*:** *Ethiopia Demographic and Health Survey (2005).*

As it is observed from Table 1, the highest unmet need for family planning was observed in Oromia National Regional State (41.3%), of which 22.6% for spacing and18.7% for limiting. Unmet need for spacing is higher than unmet need for limiting which indicates the interest of women to have more children in the future. The level of unmet need in Oromia National Regional State for the year 2005 (41.3%) is even greater than the previous figure for the year 2000 which accounts for 36.4% (CSA and ORC Macro, 2001). This increase in the level of unmet need was due to the corresponding rise in the total demand for family planning which is around 55.2% by the year 2005 (CSA and ORC Macro, 2006).Thus, examining the different demographic, socio economic and family planning related factors affecting need for family planning is of great importance for professionals in the field to effectively monitor, address and administer while implementing family planning programs.

2. Data and Methods

Data

This study used Ethiopia Demographic and Health Survey (EDHS) 2005 data to identify determinants of unmet need for contraception in Oromia National Regional State. The EDHS is a national representative household survey that assesses the population's socio-demographic, maternal and child health, and various health indicators. The statistical analysis used in this study includes those currently married women of reproductive age group (i.e 15-49 years) residing in Oromia National Regional State. This region was selected purposively for this study due to the highest unmet need observed for the mentioned period.

Study Design

This was a cross-sectional study conducted using Ethiopia Demographic and Health Survey (EDHS) 2005 data to identify the determinants unmet need for contraception among currently married women of reproductive age group (15-49 years).

Method of Data Analysis

EDHS 2005 data was secured from the Central Statistical Agency of Ethiopia. Thus, with the help of SPSS Ver.16, bivariate technique of data analysis (Chi square test) was applied to see if there is statistically significant association between each predictive and outcome variable. Moreover, multivariate technique of data analysis was used to determine the most important variables which influence unmet need for contraception. Accordingly, logistic regression model was employed to investigate the relative importance of each independent variable over the dependent one.

Table 2: Variables included in the Analysis

Variables	Categories
Dependent Variable	
Unmet need for contraception	Yes/No
Independent Variables	
Socio-economic Variables	
Place of residence	Urban, Rural
Education	Illiterates, Literates
Religion	Christian, Muslims, others
Ethnicity	Amhara, Oromo, Others
Work status	Currently working, Not Currently Working
Husband's Education	Illiterates, Literates
Exposure to media	No Exposure, Exposure to Radio/TV/Newspaper
Demographic Variables	
Age	15-19, 20-24, 25-29, 30-34, and 35+
Age at first marriage	<16, 16-19, 20+
Age at first birth	<16, 16-19, 20+
Number of living children	0, 1-3, 4+
Child loss	0, 1, 2+
Children ever born	0, 1-3, 4+
Ideal number of children	0, 1-3, 4+ and Non numeric response
Family planning variables	
Knowledge	Knows no method, Utmost three, At least four
Spousal Communication	Never Discussed, At least once
Husband's approval of FP	Disapprove, approve, do not know
Discussion of FP with HEWs	Never discussed, discussed at least once
Visit of health facility	Never visited, Visited but not told of FP, Visited and told of FP

3. Results

Results of Multivariate Analysis in the Logistic Regression Model				
Table 3: Binary Logistic Regression Coefficients for the Relationship between Unmet need and Different Factors among Married Women of Reproductive age, Oromia Region				
Variables	**B**	**St. Error**	**Sig.**	**Exp(B)**
Place of Residence				
Urban (RC)				
Rural	.120	.259	.642	1.128
Ethnicity				
Amhara (RC)				
Oromo	1.666	.401	**.000*****	5.291
Others	.034	.308	*.911*	1.035
Religion				
Christians (RC)				
Moslems	-.818	.543	.132	.441
Others	-.783	.542	.149	.457
Women Education				
Illiterates (RC)				
Literates	.321	.244	.190	1.378
Partner's Education				
Illiterates (RC)				
Literates	.088	.215	.682	1.092
Age of Women				
15-19 (RC)				
20-24	-1.997	.441	**.000*****	.136
25-29	-.534	.329	.104	.586
30-34	-.655	.271	**.016****	.519
35^{+}	-.361	.267	.177	.697
Number of Living Children				
0				
1-3	.463	.224	**.039****	1.589
4^{+}	1.746	.438	**.000*****	5.731
Number of Dead Children				
0 (RC)				
1	.297	.262	.257	1.346
2^{+}	.257	.282	.363	1.293
Knowledge of Family Planning				
Knows no method (RC)				
Utmost three	-.362	.333	.277	.696
At least four	.032	.211	.880	1.032
Discussion with Health Extension Workers				
Never Discussed (RC)				
Discussed at least once	-.737	.231	**.001*****	.478
Health Facility Visit				
Never Visited (RC)				
Visited but not told of FP	-.457	.227	**.044****	.633
Visited and told of FP	-.755	.306	**.013****	.470
Husband Approval of Family Planning				
Disapprove (RC)				
Approve	-.068	.285	.811	.934
Do not know	.317	.325	.331	1.373
Spousal Communication				
Never discussed (RC)				
Discussed at least once	-1.34	.221	**.000*****	0.262

(Note: Significant at *** P. Value < 0.01, and ** P. Value < 0.05, RC is the Reference Category)

In the logistic model the odds ratio is the exponent of regression coefficients (i.e. Exp (β)). The values of odds ratio were important to compare the likelihood of an event occurring or not occurring. This value is always one for the reference category and it can take any value between zero and infinity for other categories. If its value is greater than one, it indicates higher probability of an event to occur than the comparison group and the reverse is also true. On the other hand, the sign of β value tells us the direction of relationship between the predictor and outcome variable. Moreover, significant difference exists at 95% confidence interval (where P. value is < 0.05).

Model goodness of fit test was performed using the Hosmer and Lemeshow's goodness of fit test and it was found to be 73.5%. Moreover, collinearity diagnostic test was made using tolerance and VIF before fitting the logistic regression model. Accordingly, based on the collinearity diagnostic test children ever born variable was excluded from the multivariate analysis since it was found to have multi-collinearity effect (i.e. VIF>4 and tolerance < 0.2)

Table 3 presents results of the multivariate (binary logistic regression) analysis. The model depicts that only six variables were determinants of unmet need for contraception. These include number of living children, discussion with health extension workers, health facility visit, spousal communication, age andethnicity. The strength and direction of association between explanatory variables and outcome variable as well as the possible explanation of the correlates of unmet need is presented in the paragraphs that follow.

Number of Living Children and Unmet Need

The number of living children a woman has is strongly and directly related to unmet need for contraception. This is clearly indicated in Table 3. In this study the number of living children that woman has was categorized in to three classes. For the purpose of analysis, the first category was set as reference based on which other groups are compared.

Accordingly, it was found that number of living children made statistically significant contribution (at P. value <0.05) in determining unmet need for contraception. Overall, women who have at least one living child were more likely to have unmet need than women with no living children. More specifically, women who have four or more living children were almost six times higher (Exp (β) = 5.731) to have unmet need than women with zero number of living children (reference category). In addition to this women with one to three number of living children were almost twice more (Exp (β) = 1.589) likely to have unmet need for contraception than the reference category. It is also important to note that this finding is conformal with the bivariate analysis as well (i.e. as the number of living children increase unmet need also increases).

Spousal Communication and Unmet Need

During data collection in EDHS, women were asked whether they discussed family planning with their husbands in the last 12 months or not. Accordingly, they were categorized into two; those who never discussed and those who discussed at least once. Surprisingly, discussing family planning with husbands emerges as one of the determining factors of unmet need for contraception among women. Table 3 could be taken as tangible evidence that shows spousal communication was more strongly and negatively affects unmet need for contraception. Women who have discussed family planning at least once with their husbands were 74% (Exp (β) = 0.262) less likely to have unmet need for contraception than the reference category (women who never discussed).

Health Facility Visit and Unmet Need

Woman's visit of a health facility either for her own or for other members of family health care exerts a positive influence in meeting the unmet need. Table 3 presents the fact that women's visit of a health facility was strongly and negatively associated with unmet need for contraception. In this regard all categories with in health facility made statistically significant contribution in determining unmet need for contraception. Generally women who have at least one visit to health facility to seek health care were less likely to have unmet need. More specifically , women who visited a health facility but not told of family planning and women who visited health facility and told of family planning were less likely (37% i.e. Exp (β) = 0.633 and 53% i.e. Exp (β) = 0.470 respectively) to have unmet need for contraception.

Discussion with Health Extension Workers and Unmet Need

Bringing family planning services to door step through health extension workers is of great significance in eliminating unmet need for family planning. To investigate the influence of discussion with health extension workers on unmet need, women were asked whether they discussed family planning in last 12 months with health extension workers or not. Accordingly, they were categorized in to two, women who never discussed and women who discussed at least once. For the purpose of analysis the first group was taken as reference category.

Table 3 depicts that women's discussion with health extension workers has a positive influence in reducing unmet need. The odds ratio (Exp (β) = 0.478) for women who discussed at least once tells us that they are almost 52% less likely to have unmet need for contraception than the reference category.

Age of Woman and Unmet Need

Table 3 indicates that age of women is also important in affecting women's demand for family planning. However, not all categories of age made statistically significant contribution in explaining unmet need among women of different age groups. Women aged 20-24 years are 84% (Exp (β) = 0.136) and women aged 30-34 years are 48% (Exp (β) = 0.519) less likely to have unmet need for contraception than the reference category.

4. Discussion

In this study it was found that the number of living children that woman has was a strong and statistically significant determinant of unmet need for contraception. Accordingly, woman with more number of living children have higher unmet need for contraception than women with fewer number of living children. This finding is strongly consistent with previous studies. For instance, Antenane (2002) found strong and direct relationship between number of living children and unmet need. Moreover, other researchers like Sahlu (2007), Omwago and Khasakhala (2006) found out a similar result in their analysis of unmet need for contraception. Furthermore, a study conducted in Amhara region by Nega (2008) confirmed that there is a tendency of increasing unmet need with increasing number of living children as well.

Health facility visit was also one of the determining factors of unmet need. In this regard the finding of this study

confirms that woman's visit of a health facility was strongly and negatively associated with her unmet need for contraception. The level of unmet for contraception decreases with woman's visit of a healthy facility either for her own or for her child's health care. Results of the current study agree with findings reported in studies done on unmet need for contraception. Antenane (2002) , for instance , reported that women who visited a health facility and told of family planning by health workers are almost 53% less likely to have unmet need than women who never visited a health facility.

This study reveals that discussion of family planning with husbands was negatively correlated with unmet need for contraception. It was found that women who discussed family planning with their husbands at least one in the last 12 months have lesser unmet need than women who never discussed the issue. Once again the finding of this study was consistent with works of other researchers. For instance, Antenane (2002) reported that women who have frequent discussion about family planning with husbands were 55% less likely to have unmet need for family planning than women who never discussed family planning with their husbands. Moreover, the Zambian ministry of health (1995) reported that women who discussed family planning with their husbands are more likely to be users than their counterparts. Beside, studies conducted in Amhara Region by Nega (2008) and Mekdes (2003) reflected a similar result with regard to impact of spousal communication on unmet need.

The study also indicatesthat bringing family planning services to door step has a paramount importance in meeting the unmet need. It was found that women who discussed family planning with health extension workers have lesser unmet need than women with no contact with health extension workers. The outcome is again consistent with previous research in Ethiopia conducted by Antennae (2002). Studies conducted in Amhara region by Nega (2008) and Mekdes (2003) also come up with similar result. Furthermore, a study that was undertaken in rural Mali by Karen and others (1998) supports the current outcome. According to these writers, Community Based Distribution (CBD) approach to family planning has a decisive role in raising the knowledge and practice of contraceptives among women

5. Conclusions

The overall objective of this study was to identify the determinants of unmet need for contraception among currently married women of reproductive age group in Oromia National Regional State. Level of unmet need for contraception was higher than the national average. It was also found that number of living children that women have increases the likelihood of unmet need among women. Conversely, discussion with health extension workers and husbands, increasing age of women, and women's visit of health facility where family planning is integrated in to Maternal and Child Health (MCH) reduce the chance of having unmet need among women. Finally, the study recommends that women in their lower reproductive age should be given top priority. Moreover, MCH program should be expanded to areas where it is absent and family planning programmers should exert due effort to encourage males to discuss with their wives about family Planning and take part in contraceptive use.

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