*Full Length Research Paper*

# A population based study on unintended pregnancy among married women in a district in Southern Ethiopia

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**This study aims at examining the prevalence and risk factors for unintended pregnancies among selected married women in Damote Gale Woreda (a district in Southern Ethiopia). A multistage sampling technique was used to select women respondents in the reproductive age group of 15 to 49 years. Quantitative and qualitative data were obtained using structured questionnaires, focus group discussion and key informants interview. The dependent variable is unintended pregnancy. Demographic, socio-cultural and service related characteristics were used as explanatory variables. Of 713 women surveyed, 302(42.4%) reported that their most recent pregnancies were unintended. Most of the women (89%) knew at least one modern family planning (FP) methods. Further, we found that 84% of the women have never discussed with husbands about issues concerning FP, and 80% of women have never been visited by health workers. Major reasons mentioned for failure to avoid unintended pregnancy were lack of knowledge, disapproval by husband, difficulty to get method and method failure. The predicted probability, using logistic regression, has shown that women with delayed age at marriage, with lower parity, women exposed to radio, women who discus about FP issues with husband; those who have autonomy on their health care and those visited by FP workers are less exposed to unintended pregnancy. Finally, based on the key findings, some workable recommendations are given which includes: sustainable behavioral changes among community members, reforms in disseminating family planning and related information, enhancing women's status at all levels through formal and non-formal education, strengthening the follow up system on FP workers and beneficiaries, improving inter-spousal communication through peer or informal education and community level orientation.**

**Key words:** Unwanted pregnancy, contraception, determinants, Southern Ethiopia, Damot Gale.

## BACKGROUND

Over 100 million acts of sexual intercourse take place each day in the world, resulting around 1 million conceptions, about 50% of which are unplanned and about 25% are definitely unwanted (Akalework, 2008; WHO, 2007). The World Health Report (WHR, 2005) noted that unwanted, mistimed and unintended pregnancy is the most common cause of maternal mortality in developing countries. In Africa, the very high rate of unintended pregnancy in 1995 which was 92 per 1000 women, declined only slightly by 2008, to 86 per 1, 000

(Singns et al., 2009). The unintended pregnancy rate is much higher in Eastern Africa (118 per 1,000 women of child bearing age) and middle Africa (94 per 1,000) than in the other three sub regions: Northern, Southern and Western Africa, where the rate ranges between 56 and 83 per 1, 000 (Singns et al., 2009).

About one–third of all unintended pregnancies in Africa end in abortion (Singns et al., 2009; WHO, 2007). Although the unfavorable consequences of unintended pregnancy are well delineated, unintended pregnancy itself is less well defined. Previous research suggested that pregnancy intentions are multi dimensional, ambivalence about pregnancy is common, and the decision to carry a pregnancy to term or to abort is

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affected by life circumstances and social influences (Johns et al., 2006).

The level of unintended pregnancy can also serve as an indicator of the state of women's reproductive health, and of the degree of autonomy women have in determining whether and when to bear children (Mazharuarul and Rashid, 2004). Therefore, unintended pregnancy is an issue not to be ignored. Many pregnant women will need to end a pregnancy to avoid risks to their lives, psychological trauma, and socio economic turmoil (IPAS, 2004).

In Ethiopia, the few surveys conducted on issues related to unintended pregnancy suggested that unintended pregnancy is among the main causes of maternal mortality (Solomon and Mesganaw, 2006). Even if fertility declined steadily from 6.8 live births per women in 1981 to 5.4 in 2005 and there is increase in contraceptive prevalence, many women in Ethiopia are experiencing unintended pregnancy. For example, Ethiopian Demographic and Health Survey of 2005 reported that 35% pregnancies among women in reproductive age were unintended (CSA and ORC Macro, 2006). As a result, significant proportion of married women turned to induced abortion to avoid unintended pregnancy. According to Ministry of Health 2006 report, approximately half a million pregnancies annually end in induced abortion among 3.7 million pregnancies, which is a reflection of the high rate of unintended pregnancy.

Issues related to unintended pregnancy has been studied by few researchers in Ethiopia and little has been discussed about its cause especially in the rural parts of the county (Akalework, 2008) .Moreover, efforts to reduce the incidence of unintended pregnancy were very weak. Hence, there is a continued need for research, information sharing and documentation of efforts aimed at reducing unintended pregnancy. Therefore, this study was carried out to determine the level and determinants of unintended pregnancy among selected married women in one of the rural districts of Southern Ethiopia, Damote Gale. It is hoped that the results of this study can be used as inputs for family planning program implementation, and thereby increasing the chance of health outcomes for both mothers and their infants.

The study has tested the following six hypotheses:

(a) Unintended pregnancy is positively associated with the number of living children in household.
(b) Health extension workers visits to women decrease the likelihood of unintended pregnancy.
(c) Unintended pregnancy is negatively associated with women's level of education.
(d) Spousal communication is inversely related to unintended pregnancy.
(e) Late age at first marriage decrease the risk of unintended pregnancy.
(f) Exposure to mass media decreases the chance of unintended pregnancy.

## METHODOLOGY OF THE STUDY

### Profile of the study area

Damote Gale Woreda (district) is located in Southern Nations Nationalities and Peoples Region (SNNPR) to south direction of Addis Ababa. According to the 2007 Ethiopian Population and Housing Census, the Woreda is the 3rd most populated in Wolayta zone with a total population of 154, 610, and of which 51% were women (CSA, 2007).

The Woreda has estimated population density of 726.1 people per square kilometer which is greater than the zonal average 156.5 people per square kilometer, and is one of the highest density in Ethiopia. The Woreda is also subdivided into 31 Kebele administrations (that is, the smallest administrative segment in Ethiopia) where there is one health post per Kebele. The Woreda has 3 health centers which provide services. Mixed agriculture is the main economic activity of the Woreda. Recurrent drought is a major problem markedly reducing food production, income and assets. Limited availability of land among a growing number of households is resulting in decline in the size of land holdings (Elias, 2006).

### Data sources

The main data for this study were generated from primary sources through interviews and focus group discussion. Women whose most recent pregnancy occurred five years back from the survey date were the main participants of the study, and all pregnancies regardless of the outcomes were considered in the study.

### Sample size

The sample size was determined based on the estimates of proportion of unintended pregnancy by the Ethiopian Demographic and Health Survey 2005 which is 35% (CSA and ORC Macro, 2006). The underlying assumption here is that the population proportion of currently married women who had encountered unintended pregnancy in the study area is the same as the country's result.

By fixing the level of confidence at 95% and the error to be tolerated at 5%, the sample size was determined by the formula given by Woodward (1992):

$$(n) = P(1-P) Z^2 /e^2 + 5\%$$

where P = 0.35 , e=0.05 and  Z= 1.96.

This formula assumes that households are selected with simple random sampling procedure. However, since eligible households are not directly selected in this case, the calculated sample size should be adjusted for design effect (D).The design effect is generally assumed to be 2 .The required sample size, therefore, can be obtained by n×D. Therefore, adjusting for the design effect by 2 and considering non response rate of 5%, the total sample size taken was:

350(2) =700……..700(5%) =35…….. =700 + 35=735

A multi-stage sampling technique was used to select the study subjects. The Damote Gale Woreda has 31 Kebeles, and of which eight Kebeles were selected by using simple random sampling

technique. Each Kebele has 3 to 4 sub villages called 'gotes'. One gote was selected from each selected Kebeles using the same sampling technique.

The number of households to be included in each gote was determined in proportion with the total number of households found in each gote. Finally, based on the sampling frame of each gote, currently married women within reproductive age were selected from the selected eight gotes by using systematic random sampling method. A systematic selection was conducted across every íth household with a random start, where í was calculated by dividing number of households of the selected gote by the sample size allocated to the gote. Whenever more than one eligible respondent was found in the same selected household, only woman with recent pregnancy was preferred. In case of no eligible candidate was identified in a selected household, the interviewer was told to move to households in the clockwise direction until she gets an eligible woman. The final interviewed women were 713.

## Data collection

Questionnaires were administered to currently married women in the reproductive age group. The DHS questions were used as a main source to set the questions. Eight female data collectors who completed grade ten and one supervisor who had similar experience earlier were recruited and trained for quantitative data collection.

## Data processing and analysis

The data were processed and analyzed using SPSS version 15. Univariate, bivariate and multivariate statistical tools were applied.

In order to examine the effect of each predictor on the dependent variable, multivariate analysis technique was employed. Logistic regression is the most widely applied statistical model when the main interest is to examine the net effects of a set of independent variables on a certain dependent or response variable, where the dependent variable is dichotomous (taking the values 0 or 1). Using the binary logistic regression model, it is possible to estimate the probability (likelihood) of an event occurring. When a number of predictors are taken into consideration to estimate the likelihood of the occurrence of an outcome variable (for this study, unintended pregnancy of married women), the relation is built using the equation as follows:

$$p/(1-p)=\exp(a+Bx+c)$$

where: P is the probability that the event y occurs, at p(y=1); p/(1-p) is the "odds ratio".

Logistic regression is based on the concept of odd ratio: p/(1-p), where p is the probability that the event y occurs p(y=1) and (1-p) is the probability that the event y does not occur p(y=0). Based on this the probability of the outcome variable not occurring can be estimated as:

prob(no event)=1-prob(event).

In this case p would be the probability of unintended pregnancy, whereas 1-p would be probability of planned pregnancy, a is the constant term, B is logistic coefficient. exp(B) is the factor by which the odds change when the independent variable increased by one unit(Gujirati, 1988).

To check for goodness of fit the model, the Hosmer and Lemshow test was used which shows 0.609, indicating that the model fits well

the data (value greater than 0.05 is taken as cut point).

## Conceptual framework of the study

The fact that the current study has focused on more rural areas, the factors involved and information collected are different which also changes or modifies the conceptual framework.

## Dependant variable

The dependent variable of this study is unintended pregnancy (Figure 1). It is a measure of women's reproductive intentions and was measured by asking the respondents to recall their feeling when their last pregnancy occurred. In this study, the data were collected by asking questions like:

"Right before you become pregnant with your last pregnancy, did you want to become pregnant then, did you want to wait, or did you not want to have any more children at all?"

The answer might be wanted then-planned, wanted to wait later (mistimed) or did not want at all.

From this response, those who said mistimed and did not want at all are classified under unintended pregnancy.

## Independent variables

On the basis of literature review, the following demographic, socio cultural and service related characters are used (Figure 1):

Age of respondents (15-19, 20-24, 25-29, 30-34, 35-39, 40-44, and 45-49);
Age at the time of marriage (10-14, 15-19, 20-24);
Parity or Number of children given by respondent (0, 1-2, 3-4, 5 and above);
Ideal number of children (1-3, 4-6, 7 and above);
Highest grade completed (illiterate, 1-4, 5-8, 9-12 grades);
Women autonomy, (no autonomy, some autonomy);
Spousal communication (ever discussed, never discussed);
Family planning workers visit during the last twelve months (visited, not visited);
Travel time to family planning services (less 30 min, 30 to 60 min, above an hour (distance in kilometer);
Exposure to mass media (has no exposure, have exposure).

## RESULTS

Table 1 shows the distribution of respondents by selected demographic characteristic. Although the age of respondents who were pregnant in the past five years ranges from 15 to 49, a large majority (52.2%) were in the age group 20 to 29 with mean age of respondent being 27 years and standard deviation of 7.8. Less than one out of ten respondents (9.5%) are in the age group 40 and above. Concerning age at first marriage, above 58 % of respondents got married at age 18 with a median age at first marriage of 17.8 years.

Among the surveyed married women, less than one in ten respondents (7.3%) were currently pregnant at the time of survey and more than 3/4 of the women had three and above birth. Looking at the ideal number of children,
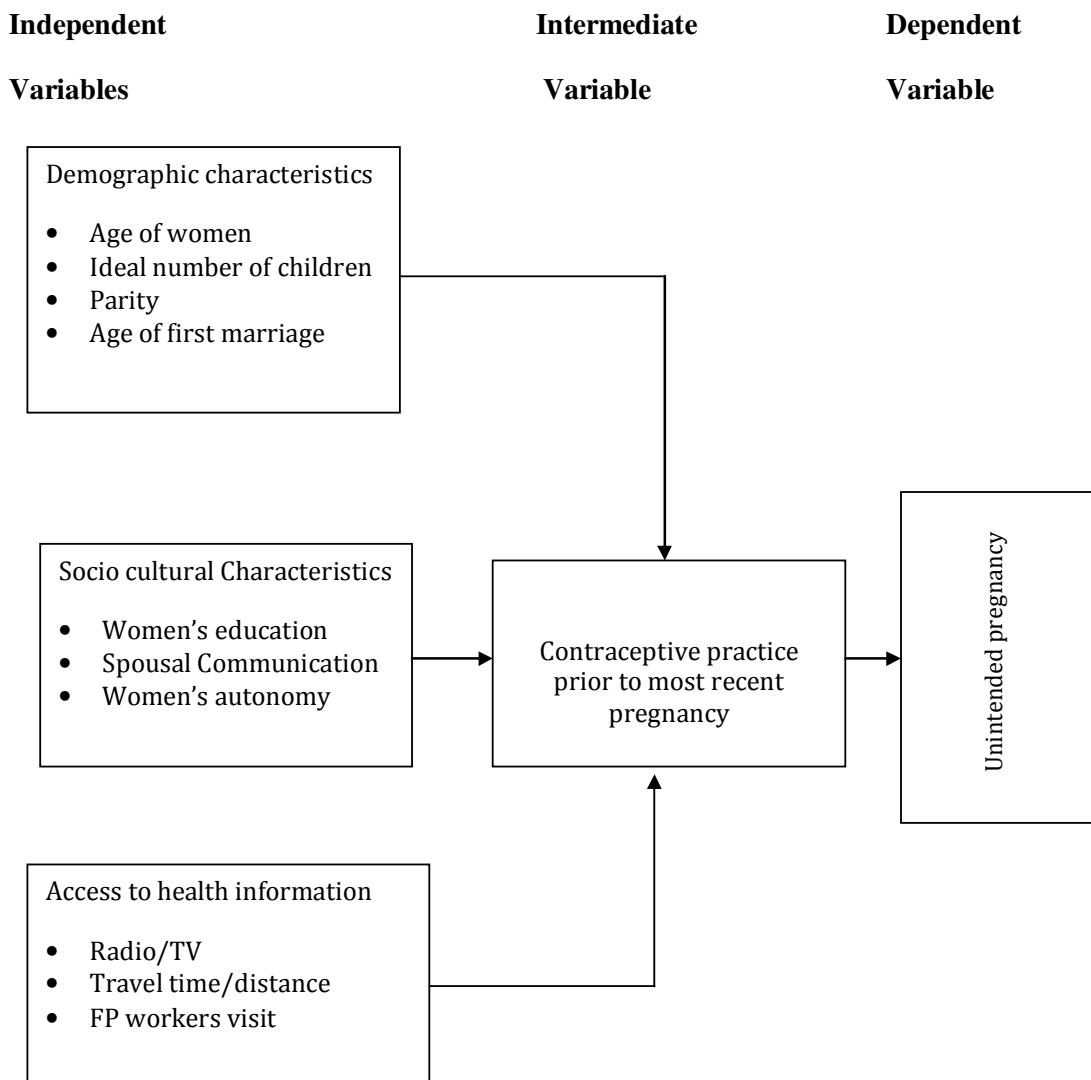
**Independent**             **Intermediate**        **Dependent**

**Variables**               **Variable**            **Variable**



**Figure 1.** Conceptual framework. Source: Developed by the Authors based on literature (2010).

more than half of the respondents (58.3%) reported that their ideal number of children is between four and six. Among the respondents, the majority (88.7%) was protestant Christians whereas Orthodox and Catholic respondents' together share almost 10%. Approximately, one–fourth of the women (28.5%) were illiterate, where as nearly seven out of ten women (69.7%) attended some primary education. Also, only less than one out of ten respondents attained secondary schools.

Table 2 shows the intensions of the respondents about their pregnancies. About one-tenth of the respondents mentioned that they wanted their current pregnancies later (mistimed = 10.5%) and the other three –tenth reported that they did not want their current pregnancies at all (unwanted = 31.8%).When summing up these two, more than two – fifth of respondents (42.4%) reported their current pregnancies were unintended (that is,

mistimed and unwanted pregnancy).

About 39% of the respondents reported ever use of contraception and 61% never used contraception during their life time. The current users of contraception accounted for 21.3% (Figure 2). Major reasons reported for failure to avoid unintended pregnancy were: desire to have children and disapproval by husbands (34.6%), and lack of knowledge and difficulty to get the method shares (30.1%). The least important reason identified was health concern which is 4.8 percent as shown in Figure 3.

Table 3 presents the association of selected characteristics and unintended pregnancies. The results indicated that women's autonomy, age of the respondent, age at the time of marriage and visit by FP worker were strongly associated with unintended pregnancy at $p< 0.001$ where as number of children born, education and spousal communications were associated with $p < 0.01$

**Table 1.** Percentage distribution of respondent by selected socio-demographic characteristic in Damote Gale Woreda (n = 713).

| Name | Character | Frequency | Percent | |
|---|---|---|---|---|
| Age of respondent | 15-19 | 67 | 9.4 | |
| | 20-24 | 149 | 20.9 | |
| | 25-29 | 223 | 31.3 | |
| | 30-34 | 94 | 13.2 | Mean of respondents 27 years with SD7.8 |
| | 35-39 | 112 | 15.7 | |
| | 40-44 | 60 | 8.4 | |
| | 45-49 | 8 | 1.1 | |
| | Total | 713 | 100.0 | |
| Age at first marriage | < 10 | 6 | 0.9 | |
| | 11-14 | 153 | 23.4 | |
| | 15-18 | 224 | 34.3 | Median age at first marriage 17.8 years |
| | 19-22 | 259 | 39.7 | |
| | 23 and above | 11 | 1.7 | |
| | Total | 653* | 100 | |
| Children ever born | 0 | 52 | 7.3 | |
| | 1-2 | 102 | 14.3 | |
| | 3-4 | 318 | 44.6 | |
| | 5 and more | 241 | 33.8 | |
| | Total | 713 | 100.0 | |
| Ideal number of children | 1-3 | 144 | 29.5 | |
| | 4-6 | 284 | 58.3 | |
| | 7 and more | 59 | 12.1 | |
| | Total | 487 | 100.0 | |
| Religion | Orthodox | 56 | 7.9 | |
| | Muslim | 8 | 1.2 | |
| | Catholic | 14 | 1.9 | |
| | Protestant | 633 | 88.8 | |
| | Others | 2 | 0.2 | |
| Highest grade completed | Illiterate | 203 | 28.5 | |
| | 1-4 | 279 | 39.1 | |
| | 5-8 | 218 | 30.6 | |
| | 9-12 | 13 | 1.8 | |
| | Total | 713 | 100.0 | |

*some women could not report age.

**Table 2.** Distribution of respondents by reported pregnancy outcome in Damote Gale Woreda (n = 713).

| Pregnancy out come | Frequency | Percents |
|---|---|---|
| Unintended | 302 | 42.4 |
| Mistimed | 75 | 10.5 |
| Unwanted | 227 | 31.8 |
| Planned | 411 | 57.6 |
| Total | 713 | 100 |

and $p < 0.05$ values respectively.

The result of the logistic regression model for demographic, socio-demographic and service related characteristics are presented in Table 4. In the model, eight variables were identified as significant variables predicting unintended pregnancy. Travel time to nearest FP services was found to be insignificant in the multivariate analysis.

Similarly, age at first marriage, total children ever born, highest grade completed, spousal communication, exposure to mass media, women's autonomy and FP
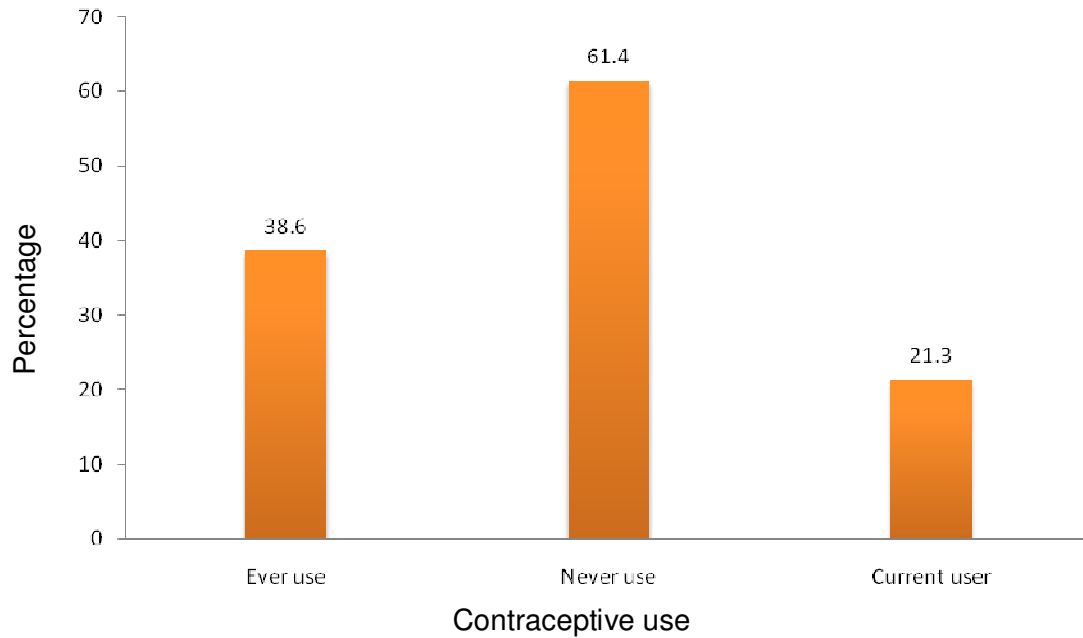
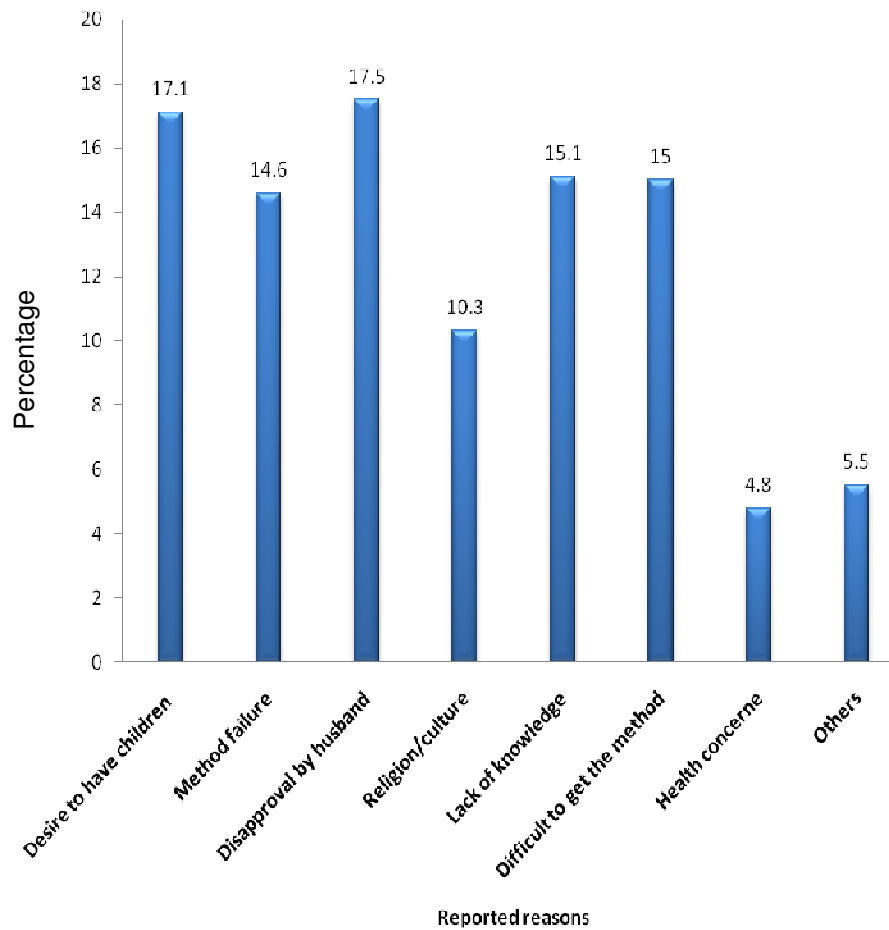**Figure 2.** Distribution of respondents by contraceptive use.



**Figure 3.** Major reasons given to avoid unintended pregnancy.

**Table 3.** Results of bivariate analysis for associations between unintended pregnancy and selected explanatory variables in Damot Gale (n = 713).

| Name | Class | Unintended | Total | Percentage | $\chi^2$ |
|---|---|---|---|---|---|
| | 15-19 | 43 | 67 | 64.2 | |
| | 20-24 | 61 | 149 | 40.9 | |
| | 25-29 | 95 | 223 | 42.6 | |
| Age of respondent | 30-34 | 27 | 94 | 28.7 | 30.063*** |
| | 35-39 | 38 | 112 | 33.9 | |
| | 40-44 | 32 | 60 | 53.3 | |
| | 45-49 | 6 | 8 | 75 | |
| | | | | | |
| | 10-14 | 87 | 155 | 56.1 | |
| Age at marriage | 15-19 | 178 | 428 | 41.6 | 30.09*** |
| | 20-24 | 10 | 66 | 15.2 | |
| | 25and above | 0 | 4 | 0 | |
| | | | | | |
| | 0 | 16 | 52 | 30.8 | |
| Number of children born | 1-2 | 37 | 102 | 36.3 | 12.817** |
| | 3-4 | 126 | 318 | 39.6 | |
| | 5 and above | 123 | 241 | 51 | |
| | | | | | |
| | 1-3 | 66 | 137 | 48.2 | |
| Ideal number of children | 4-6 | 164 | 304 | 53.9 | 1.37 |
| | 7 and above | 59 | 84 | 70.2 | |
| | | | | | |
| | Illiterate | 109 | 203 | 53.7 | |
| Highest grade completed | 1-4 | 116 | 279 | 41.6 | 19.054** |
| | 5-8 | 74 | 218 | 33.9 | |
| | 9-12 | 3 | 13 | 23.1 | |
| | | | | | |
| Women's autonomy | No autonomy | 100 | 145 | 69 | 52.784*** |
| | Some autonomy | 202 | 568 | 35.6 | |
| | | | | | |
| Spousal communication | Ever discussed | 38 | 114 | 33.3 | 4.525* |
| | Never discussed | 264 | 599 | 44.1 | |
| | | | | | |
| | <30 | 32 | 89 | 36 | |
| Travel time to FP source | 30-60 | 192 | 392 | 49 | 6.654* |
| | >60 | 72 | 136 | 52.9 | |
| | | | | | |
| Exposure to mass media | have no exposure | 256 | 562 | 45.6 | 11.097** |
| | have exposure | 46 | 151 | 30.5 | |
| | | | | | |
| | visited | 34 | 141 | 24.1 | |
| Visit by FP workers | not visited | 268 | 572 | 46.9 | 23.957*** |
| | Total | 302 | 713 | 42.4 | |

NB: *=p<0.05, **=p<0.01, ***=p<0.001

workers' visit were found to have statistically significant influence on unintended pregnancy. Respondents of age group 20-24 are 48% less likely to experience unintended pregnancy than those who are in the age 25-29 (Reference Category, RC). The analysis indicated that as age of respondent increases, the likelihood of women experiencing unintended pregnancy decreases until age 39, and then for the last age groups that is, 40-45 and

**Table 4.** Results of logistic regression for socio-demographic variables in Damote Gale Woreda (n = 713).

| Variables | B | S.E. | Sig. | Exp(B) |
|---|---|---|---|---|
| **Age of women** | | | | |
| 15-19 | -0.407 | 0.290 | 0.000 | 0.965 |
| 20-24 | 0.415 | 0.460 | 0.036 | 0.520 |
| 30-34 | -2.313 | .0454 | 0.000 | 0.099 |
| 35-39 | -2.067 | 0.435 | 0.000 | 0.127 |
| 40-44 | 0.209 | 0.477 | 0.001 | 1.20 |
| 45-49 | 0.393 | 0.998 | 0.032 | 1.37 |
| 25-29(RC) | - | - | -- | - |
| | | | | |
| **Children ever born** | | | | |
| 0 | 1.220 | 0.388 | 0.002 | 3.388 |
| 1-2 | 1.316 | 0.622 | 0.034 | 3.728 |
| >=5 | 1.748 | 0.476 | 0.000 | 5.605 |
| 3-4(RC) | - | - | - | - |
| | | | | |
| **Age at first marriage** | | | | |
| 10-14 | 0.281 | 0.251 | 0.026 | 1.342 |
| 20-24 | -1.817 | 0.440 | 0.000 | 0.163 |
| 15-19(RC) | - | - | - | - |
| | | | | |
| **Educational status** | | | | |
| Illiterate | 0.139 | 0.249 | 0.004 | 1.149 |
| 5-8 | -0.230 | 0.245 | 0.034 | 0.794 |
| 9-12 | -0.740 | 0.817 | 0.036 | 0.483 |
| 1-4(RC) | - | - | - | - |
| | | | | |
| **Woman's autonomy** | | | | |
| No autonomy | 1.451 | 0.267 | 0.000 | 4.269 |
| Some autonomy(RC) | - | - | - | - |
| | | | | |
| **Spousal communication** | | | | |
| Ever discussed | -0.850 | 0.281 | 0.002 | 0.428 |
| Never discussed(RC) | - | - | - | - |
| | | | | |
| **Travel time to FP service** | | | | |
| <30 | -0.530 | 0.316 | 0.093 | 0.589 |
| >60 | 0.102 | 0.248 | 0.680 | 1.108 |
| 30-60(RC) | - | - | -- | - |
| | | | | |
| **Exposure to mass media** | | | | |
| Have exposure | -0.889 | 0.269 | 0.001 | 0.411 |
| Have no exposure(RC) | -- | - | - | - |
| | | | | |
| **Visit by FP worker** | | | | |
| Visited | -1.199 | 0.275 | 0.000 | 0.301 |
| Not visited(RC) | - | - | - | - |
| Constant | -0.491 | 0.431 | 0.255 | 0.612 |

RC-Reference category; R-Squared=0.761; Number of cases = 713; *, **, *** Significant at α = 0.05, 0.01 and 0.001, respectively. Source: Own data.

45-49, the likelihood of unintended pregnancy increased by 1.2 and 1.3 times respectively compared to the reference category.

Those respondents having no child and 1-2 children

were nearly three and four times more likely to label their recent pregnancy unintended than those women with 3-4 children. Those women with children above five were five or more times experiencing unintended pregnancy than RC group.

Age at marriage was also found to be a significant predictor of unintended pregnancy. The risk of experiencing unintended pregnancy among women who got married before age fifteen is 1.3 times higher than those women who got married in ages 15- 19. Over all, the probability of unintended pregnancy decreased as age at first marriage increased. The study revealed significant association between educational status and unintended pregnancy where the odds of unintended pregnancy decreased for women in 5-8 and 9-12 grades compared to those in grade 1-4. Likewise, illiterate women are 1.15 times more likely to experience unintended pregnancy compared to the reference group.

Women who had no autonomy on their health care were 4.3 times more likely to have unintended pregnancy compared to those who had some autonomy on their health care. Also, it was found that those who discuss about FP issues were 57% less likely to experience unintended pregnancy compared to the reference category.

Respondents who were exposed to radio were nearly 69% less likely to report unintended pregnancy compared to those who were not exposed. Similarly, those who were visited by FP workers during a reference period of 12 months are 70% less likely to experience unintended pregnancy compared to those who were not.

## DISCUSSION

In this study, attempt is made to examine the magnitude and predictors of unintended pregnancies based on a representative sample of 713 women drawn randomly from Damot Gale district, Southern Ethiopia. It is understood from the analysis that more than two – fifth of respondents (42.4%) reported their current pregnancies were unintended (that is, mistimed and unwanted pregnancy). This figure is higher than national average which is 35% according to Ethiopian DHS of the 2005 (CSA and ORS. Macro, 2006). It is also seen that women had some reasons for the failure to avoid the reported unintended pregnancy ranging from desire to have children and disapproval by husband to lack of knowledge and difficulty to get the method. Two striking reasons (husband disapproval and lack of knowledge) account for more than 65% of the rationale given by the respondents, suggesting that husbands have pivotal role in the occurrence of the events.

We found out that the eight variables predicting unintended pregnancy in the study area are related to either the women's characteristics or household socio-demographic status or service related characteristics.

The risk of experiencing unintended pregnancy is higher among the younger and older women compared to those in the middle ages. The study revealed that women above age 40 experienced higher level of unintended pregnancy which may be due to the fact that women who are above 40 usually have attained their desired number of children, and hence, less likely to use method of contraception to prevent the pregnancy. Some pre menopausal women may erroneously assume that they are no longer fertile and be surprised by unintended pregnancy. Another reason worth mentioning here is the high likelihood of menstrual irregularity during this age group which makes it difficult for them to use contraceptives. A similar result was found specially for the last age groups in a study conducted among currently married pregnant women in Indonesia (Jaeni, 2007) which shows the higher the age of women, the higher chance of having current pregnancy as unintended, and study conducted in Egypt (Shaheen et al., 2007) also confirmed the same result. Moreover, during the focus group discussions, the health extension workers said that older married women are not willing to take contraceptives due to the reasons mentioned above.

From the predicted probability, it is clearly seen that women in delayed age at marriage are at lower risk of facing unintended pregnancy. For example, respondents whose age at first marriage occurred in the age group 10 to 14 years experienced unintended pregnancy nearly twice compared to those women with higher age at first marriage (20 to 24). Most of the focus group discussants agreed that those women who have married early are more likely to be influenced by their husband, family and culture with regards to decision on their pregnancy timing and intention. A study conducted in Harar (Southeastern part of Ethiopia) documented that women with age at first marriage less than 20 years had higher chance of experiencing unintended pregnancies (Solomon and Mesagnaw 2006). Also, a study conducted in Adama (Southeastern part of Ethiopia) documented that women who got married below age nineteen were three times more likely to label the pregnancy as unintended (Biniyam, 2009).

Educational status of women has become one of the predictors of unintended pregnancy in Damote Gale Woreda. In a situation, like the study community, where large majority are illiterate, even little advance in education improves women's decision making power leading to avoidance of unintended pregnancy. A study conducted in Hawassa (Akalework, 2008) has showed similar results. Yonas (2005), in his study of currently married women in Assosa town, indicated education as having the pervasive impacts on married women's pregnancy intention since it empowers women with knowledge and practice of contraceptive methods. Bongaarts (1997) also noted that education reduces the chance of discontinuity of contraceptive.

The finding on the relationship between women's

autonomy and the occurrence of unintended pregnancy suggests that the risk of facing unintended pregnancy increased with loss of autonomy in the household's decision making. The variable was measured by the oral report on autonomy in the areas of their own health care, making large household daily purchase and visit to family.

This is because in a patriarchal society, like ours, women are often given less opportunity to self-supporting and have to depend on the male relatives for their survival.

The study result also suggests that unintended pregnancy is more likely to occur when a woman believes that her husband opposes her use of contraception or other traditional protective mechanisms. Previous studies documented that women's perception that their husbands oppose FP is one of the dominant factors for discouraging contraceptive practice in a wide variety of settings For instance, a study conducted in Togo suggested that communication between the spouses is necessary in order for them to reach consensus on desired family size and for achievement of their reproductive goals (Gage, 1995).

The predicted probabilities have also indicated decreased risk of facing unintended pregnancy with increased exposure to media and visits by FP workers. Some studies also indicated that mass media have an important effect on reproductive behavior (Odimegwu, 1999). This is related to its role in providing women with knowledge on family planning and increasing current use of contraceptive which may result in low percentage of unintended pregnancy. Phillips et al. (1998) in Kenya found that women who have been visited by FP outreach workers are more likely to use modern contraceptive methods, which may bring down the chance of experiencing unintended pregnancy.

Finally, it is important to mention some of the major weaknesses of the study. The major limitation of this study emanated from the very nature of the subject and method it employed. Since the research is a cross sectional retrospective measure of women's pregnancy intention, the probability of recall bias and miss reporting of events likely to happen. Besides, the variables used in the analysis were collected at specific point in time, making it difficult linking their effects with the outcome variable.

On the other hand, in view of reducing recall bias and misreporting, proper training of data collectors and close supervision of data collection and management were done. Despite, the few weaknesses mentioned here, we believe that the present study contributes to our understanding of the depth of the problem in the study area with some practical relevance to other zones having similar characteristics.

## CONCLUSIONS AND RECOMMENDATIONS

The study was done on a randomly drawn sample of 713

married women, whose recent most pregnancy occurred five years back to the survey date. The results of the study has shown that the prevalence of unintended pregnancy is very high (42.4%) and well above the national average.

The study concludes that no single factor accounted for the high rates of unintended pregnancy, rather many factor were interwoven to affect the occurrence of the event. Among these socio-demographic and service related factors, the study has documented that age of women, women's age at first marriage, exposure to mass media, spousal communication, women's autonomy and visit by FP workers were significant predictors of unintended pregnancy in Damot Gale Woreda, Southern Ethiopia.

On the basis of the key findings discussed above, the first and foremost call of this study is the prevention of the occurrence of unintended pregnancies by all bodies at both regional and local levels. As part of long term strategy, programs should be designed to ensure sustainable behavioral changes among community members ,reforms in disseminating family planning and related information in such a way that it actually addresses the real targets, and  relentless efforts in enhancing women's status at all levels through formal and non-formal education. As part of short term strategies, the concerned local authorities should make sure that FP resources are available with quantity and quality, strengthening the follow up system on FP workers and beneficiaries, improving inter- spousal communication through peer or informal education and community level orientation.

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