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Partnership in Improving Reproductive Health

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Couples' Characteristics and Use of Prenatal Care in Oromia and Sidama, Ethiopia

Summary

This paper examines the relative influence of husbands' and wives' attitudes and background characteristics on prenatal care utilization in a sample of women drawn from two urban areas and one rural area in southern Ethiopia. A husband's approval of prenatal care is the most important factor in determining whether a woman gets medical care. Among women whose husbands did not approve of prenatal care, only 40% received care, compared to 79% of those whose husbands approved of prenatal care. No other characteristic is associated with such a differential in prenatal care. The observed differences in prenatal care use by husbands' approval of prenatal care are apparent in complex multivariate models that control for other known factors affecting prenatal care. We find that husbands' approval has a greater effect on prenatal care utilization than either whether the pregnancy was wanted or by women's education. We also find that the impact of husbands' approval on prenatal care is greatest among women under age 20. *Our findings underscore the importance of targeting men when designing interventions intended to raise awareness and use of prenatal health-care services.*

Background

Prenatal care is known to be one of the most effective health interventions for the prevention of maternal morbidity and mortality, particularly in places where the general health status of women is poor. Studies indicate that the risk of maternal morbidity and mortality is significantly higher among women who do not receive prenatal health-care services compared to women who do (1). Prenatal care is also associated with fewer complications during pregnancy, higher birth weights, and lower rates of perinatal, neonatal, infant and child mortality (2). The health benefits of prenatal care operate primarily through the diagnosis and timely treatment of pregnancy-related complications and the reduction of modifiable risk factors (3).

The gains from expanded prenatal healthcare utilization are greatest in countries where fertility and mortality are high. Ethiopia's maternal mortality rate of 14 deaths per 1,000 live births, and its infant mortality rate of 116 deaths per 1,000 live births are among the highest in the world (4-8). The relatively low level of prenatal healthcare utilization in Ethiopia is certainly a contributing factor to the high rates of infant and maternal mortality. The 2000 Ethiopian Demographic and Health Survey (DHS) found that only 27 percent of mothers who had a live birth in the five years preceding the survey received prenatal care from health professionals (9). Limited access to formal maternal healthcare services is an important factor in the low rates of prenatal care utilization; however, the non-acceptance of formal healthcare and the failure to recognize its benefits are important barriers to service utilization even in areas where services are available.

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The identification of sociocultural barriers to the utilization of maternal healthcare services is an important component in the design of effective strategies for increasing prenatal care utilization. Women's health seeking behavior, however, is influenced by intervening social relations that may prescribe the range and extent of their autonomous action. In traditional, patriarchal societies where restrictions are placed on a woman's freedom of movement and contact with unrelated men, a husband's attitude toward prenatal care may be an important factor in determining whether such care is received.

While men's approval of formal prenatal care may be culturally patterned along ethnic and religious lines, there may also be significant variation within ethno-religious groups based on levels of education, exposure to modern healthcare practices, and individual interpretations of religious values and adherence to traditional beliefs. This paper examines the relative influence of husbands' and wives' attitudes and background characteristics on prenatal care utilization in a sample of women drawn from two urban areas and one rural area in southern Ethiopia. One of the paper's primary objectives is to draw greater attention to men's role in the decision to use formal prenatal care services. We also determine whether the actual influence of a husband's beliefs on a woman's health seeking behavior varies by whether the woman wanted the pregnancy and by background characteristics that are associated with variation in female autonomy, such as education and religion.

Data and Methods

We use data from a community-based survey of maternal health conducted in 1997 in the Oromia and Sidama regions of southern Ethiopia by investigators from Jimma University. The Yirgalem and Jimma Survey of Maternal Health collected fertility and health-related data from 1,750 randomly sampled women with childbearing experience in two regional towns and nearby rural communities. One of the unique advantages of the Yirgalem and Jimma Survey is that it collected information on husbands' or partners' characteristics including attitudes toward prenatal care (not measured in the 2000 Ethiopia Demographic Health Survey [DHS]).

Jimma Town has a population of approximately 93,000 (5), and is an administrative and commercial center in the Oromia region. Yirgalem is in the Sidama Zone of the Southern Nations Nationalities and Peoples Region (SNNPR), in one of the most densely populated zones of Ethiopia. The town of Yirgalem has a population of approximately 25,000. At the time of the survey, Jimma had one hospital, one health center, three health stations and five private clinics. The population of Yirgalem was serviced by one hospital and one health center in the town, and seven health stations in the surrounding rural communities. Basic prenatal healthcare services were available at the publicly operated facilities free of charge, and at private clinics for a fee.

Ninety percent of the women interviewed for the Yirgalem and Jimma Survey were in formal unions or marriages, and 10 percent were in unstable unions or informal relationships. In both cases, women were asked to report on their husbands or partners. In this paper we use the term "husband" to refer to both husbands and partners. The Yirgalem and Jimma Survey recorded the month of the first prenatal care visit to a modern health institution during the most recent pregnancy that ended in a live birth. Wantedness was measured as whether the pregnancy was planned, unplanned but wanted, or unplanned and unwanted. Husbands' attitude toward prenatal care was measured by the women's response to a question on whether her husband approved, was neutral, or disapproved of her going to a modern health center for prenatal care.

Results

The background characteristics of women in the sample, and the percentage of women who received prenatal health care at any time before the birth of the most recent child, are described in Table 1. Sixty-nine percent of the women in the sample received formal prenatal care during their last pregnancies. This figure is considerably higher than the level reported for Ethiopia as a whole in the 2000 DHS and reflects the urban population coverage of the Yirgalem and Jimma samples. Both Jimma and Yirgalem Towns have relatively well-developed health infrastructures. The rural communities sampled around Yirgalem have access to local healthcare facilities, but in practice, access of rural persons to healthcare facilities is likely to be somewhat restricted by the limited hours and staff of the local health stations, and by difficulties with transportation to urban areas.

Table 1. Descriptive Statistics for Selected Variables, Women of Reproductive Age with at Least One Live Birth, Yirgalem and Jimma Survey of Maternal Health, 1997.

Variables	% Women	% Received prenatal care
Woman wanted pregnancy (ref = No)	50.2	61.5
Yes	49.8	77.0
Partner approves of prenatal care (ref = No)	25.6	39.7
Yes	74.4	79.4
Women's education (ref = No schooling)	31.3	49.7
Primary	29.8	66.9
Post primary	38.9	86.8
Husbands' education (ref = No schooling)	15.2	50.0
Primary	24.9	58.5
Post primary	59.9	78.6
Women's ethnicity (ref = Sidama)	35.3	51.1
Oromo	17.5	78.5
Amhara	19.1	81.4
Other	28.1	78.0
Husbands' ethnicity (ref = Sidama)	38.5	56.5
Oromo	18.6	77.6
Amhara	14.2	82.7
Other	28.6	74.3
Women's religion (ref = Orthodox)	45.7	76.7
Protestant	33.4	55.9
Muslim	17.7	77.4
Others	3.2	57.1
Women's sex preference for most recent birth (ref = No preference)	45.7	60.1
Son	31.4	76.9
Daughter	22.9	77.1
Union type (ref = Stable)	89.5	71.7
Unstable	10.5	48.6
Women's age (ref = <20)	12.9	60.2
20 – 29	61.1	72.6
30+	25.9	65.9
Parity (ref = 1)	29.0	73.2
2-3	32.9	72.4
4-5	19.0	70.0
6+	19.0	57.1
Prior infant death (ref = None)	86.1	70.7
One or more	13.9	60.2
Prior prenatal care utilization (ref = No)	53.5	55.9
Yes	46.5	84.6
Place of residence (ref = Yirgalem, rural)	31.8	49.2
Yirgalem, urban	28.5	74.9
Jimma, urban	39.7	81.3
Number of women = 1,750		69.2

One-half of the women in the sample wanted their most recent births, and three-quarters reported that their husbands approved of prenatal care. Use of prenatal care varies substantially both by whether the pregnancies were wanted by the mothers, and husbands' approval of prenatal care. Seventy-seven percent of women who wanted their pregnancies used prenatal care compared to 62 percent of women who did not want their pregnancies. The difference is even larger for husbands' approval. Nearly eighty percent of women who reported that their husbands approved of prenatal care actually used prenatal services, compared to only forty percent of women whose husbands did not approve of prenatal care.

The study population is very diverse in terms of education, ethnicity, and religion. Approximately one-third of the women in the sample have no schooling, whereas close to forty percent have some education beyond the primary level. Men on average tend to have higher levels of education than the women – only 15 percent of husbands have no schooling, while 60 percent have more than a primary level education. Sidama, Oromo, and Amhara are the three most prevalent ethnic groups in the sample, with Sidama the most numerous of the three groups (39 percent). Close to one-half of the women are Orthodox Christian and another one-third are Protestant. Eighteen percent of women are Muslim, and 3 percent practice other religions. These ethnic and religious identities are those commonly found in Jimma and Yirgalem Towns, and do not display the full diversity of the Ethiopian population.

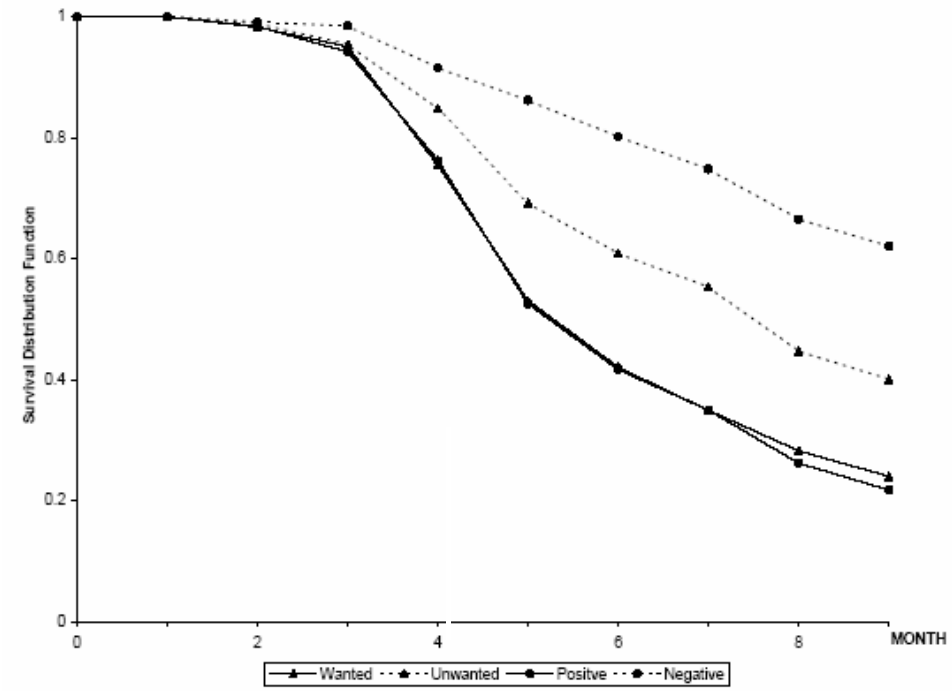
The distribution of men's ethnicity closely mirrors that of women. Because marriage between men and women of different religions is relatively uncommon in the study area, the survey did not record husbands' or partners' religion. The basic relationship between education and prenatal care, and ethnicity and prenatal care is the same for women and men. Higher levels of education (whether men's or women's) are associated with a greater likelihood of using prenatal care. Prenatal care is also most common among the Amhara and Oromo, and least common among the Sidama.

Other variables that show a strong relationship with prenatal care utilization are union type, prior use of prenatal care, and place of residence. Women in stable unions are 50 percent more likely than women in unstable unions (72 percent compared to 49 percent) to use prenatal care, and women who had used prenatal care during a prior pregnancy are 50 percent more likely to use prenatal care during the most recent pregnancy than women with no prior prenatal care experience (85 percent compared to 56 percent). As expected, use of prenatal care is more common in urban areas than in rural areas. Eighty-one percent of women in Jimma Town and 75 percent of women in Yirgalem Town used prenatal care compared to 49 percent of women in rural areas outside of Yirgalem Town.

We next examine the month during pregnancy that the first instance of prenatal care occurs (Figure 1). This is more relevant to maternal health and child outcomes as it provides information about which women seek prenatal care in the first two trimesters of pregnancy when interventions are most effective. To do this we use Kaplan-Meier estimates of the survival curves for time of first use of prenatal care. These survival curves measure the percent of mothers at each month of pregnancy *who have not yet received prenatal care*. Figure 1 shows the percentage of women who have not yet sought prenatal care by whether the woman reports the pregnancy was wanted and by husbands' approval of prenatal care. The two lowest curves to the left correspond to women who wanted their last pregnancy, and women with husbands who approved of prenatal care. Both curves are virtually identical with median durations of approximately 5 months prior to seeking prenatal care. The survival curve at the top corresponds to women whose husbands did not approve of prenatal care. The median for this group cannot be calculated because less than 50 percent of these women ever used prenatal care. The intermediate curve corresponds to women who did not want their last pregnancy. Figure 1 shows the strong effect of a husband's approval on a woman's use of prenatal care. Not only is the effect highly significant (based on the log-rank test), it is also substantially greater than the effect of whether the woman wanted the pregnancy. In fact, the results show that

about two-thirds of women whose husbands approved of prenatal care actually received care in the first two trimesters, compared to only one-fifth of women whose husbands disapproved of prenatal care. This is a remarkably large effect.

Figure 1. Kaplan-Meier Survival Curves for Time of First Prenatal Visit by Pregnancy Wantedness and Husbands' Approval of Prenatal Care, Women of Reproductive Age with at Least One Live Birth, Yirgalem and Jimma Survey of Maternal Health, 1997.



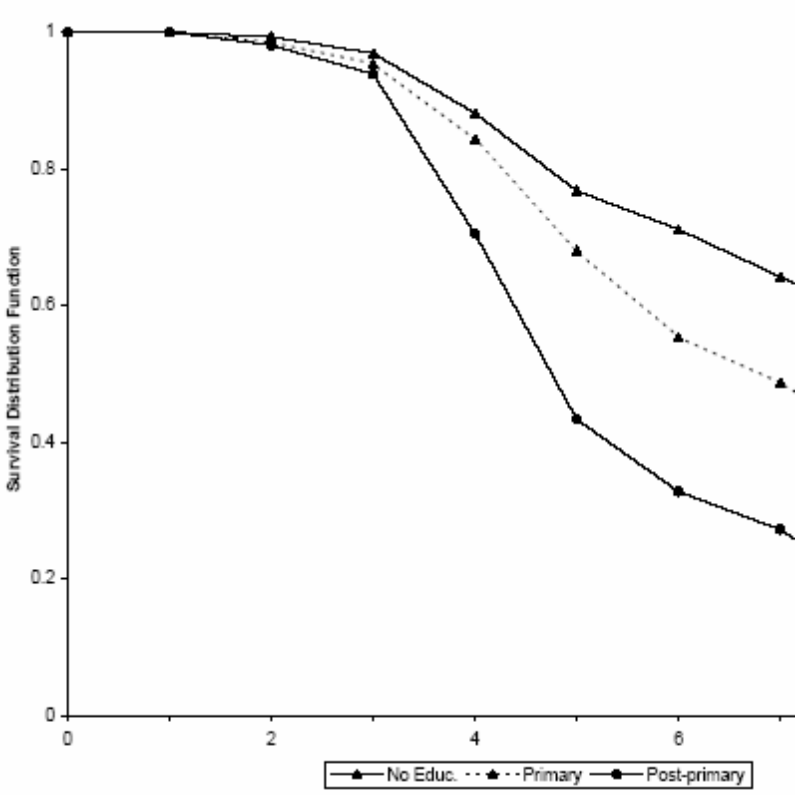
For comparison purposes, Figure 2 presents Kaplan-Meier estimates of the survival curves for time of first use of prenatal care by level of women's education. Women's education is commonly considered in the health services literature as a powerful policy instrument for raising health awareness and health-care utilization, and these results are consistent with that. Comparing Figure 2 to Figure 1, the difference in the survival curves between having a husband who approves of prenatal care and having a husband who does not is similar in magnitude to the difference between having no schooling and post-primary schooling.

The large impact of husbands' approval of prenatal care on actual prenatal care received by pregnant women might be due to other factors known to modify the likelihood of prenatal care, such as whether the birth was wanted, the women's educational level, and prior prenatal care. It might also be the case that these factors simultaneously impact both on the wantedness of the pregnancy and on the likelihood of seeking prenatal care. To evaluate these alternatives we estimated two complex statistical models.

**Figure 2. Kaplan-Meier Survival Curves for Time o
by Women's Education, Women of Reproductive Age wit
Yirgalem and Jimma Survey of Maternal H**

The first model (called a bivariate probit moc husbands on whether the women reported wanting th care experience. The model includes a correlation te causal order on the dependent variables. Significant include education, religion, types of union, age, parit primary education are significantly more likely than have wanted their most recent pregnancy. Although t whether the pregnancy was wanted, after controlling Protestant women are more likely to have wanted the Age and having had a prior infant death are also posi pregnancy. Women in unstable unions and women at have wanted their most recent pregnancy than wome childbearing.

A husband's education is positively related tc whereas being in an unstable union and high parities likelihoods of approving prenatal care. In the case of appear to be important. Women in unions with Amha approve of prenatal care than women married to Sida place of residence are also important. The husbands husbands of women living in Yirgalem or Jimma Tov



Even though there are similarities in the underlying determinants of pregnancy wantedness and a husband's approval of prenatal care, the two attitudes are independently determined. The significance of this finding for our analysis is that pregnancy wantedness and approval of prenatal care are not reflections of one another; they are independently rather than jointly determined. Taking into consideration women's thoughts or feelings about pregnancy is not the equivalent of taking into consideration husbands' position on prenatal care. This makes it possible to estimate a second complex statistical model that assesses the relative impact of whether a pregnancy was wanted, and husbands' approval on the use of prenatal care services (using what is called a log-log regression model, which provides the relative risk of prenatal care in each trimester).

Table 2. Relative Likelihood of Receivi
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Variables[a]	Ex
Woman wanted pregnancy	
Husband approves of prenatal care	
Women's education (ref = no schooling)	
Primary	
Post primary	
Women's ethnicity (ref = Sidama)	
Oromo	
Amhara	
Other	
Women's religion (ref = Orthodox)	
Protestant	
Muslim	
Others	
Women's sex preference for most recent birth (ref = No preference)	
Son	
Daughter	
Union type (ref = Stable)	
Unstable	
Women's age (ref = <20)	
20-29	
30+	
Parity (ref = 1)	
2-3	
4-5	
6+	
Prior infant death experience (ref = No)	
One or more	
Prior prenatal care utilization (ref = No)	

The results of this statistical model are provided in Table 2. Both whether a pregnancy was wanted and husbands' approval of prenatal care are highly significant predictors of prenatal care utilization. Women who wanted their pregnancy are 1.5 times as likely to have used prenatal care as women who did not want their pregnancy, and women whose husbands approve of prenatal care are over twice (2.2) as likely to have used prenatal care as women whose husbands did not approve of prenatal care. The effect of husbands' approval is not only substantially larger than the effect of whether the pregnancy was wanted, it also exceeds in magnitude the effects of having a post-primary education compared to no education (1.6) and the effect of living in an urban area compared to a rural area (1.35 for Yirgalem town and 1.95 for Jimma Town). The only relative risk factor larger than husbands' approval is prior use of prenatal care, which is 2.4. Other factors associated with a significantly higher likelihood of prenatal care utilization include being Amhara, preferring a boy or a girl as compared to having no sex preference, and being age 30 or above. Factors associated with a significantly lower likelihood of using prenatal care include being in an unstable union compared to a stable union, and having other children. These results highlight the importance of taking into account husbands' attitudes when creating programs or interventions designed to raise the use of formal prenatal-care services.

The final question we address in this paper is whether the influence of a husband's approval on a woman's use of prenatal care varies by selected characteristics of the woman that other studies have found to be associated with greater autonomy in decision making (10, 11). We estimated three separate interaction models: the first includes an interaction between pregnancy wantedness and husbands' approval, the second model includes the interaction between women's education and husbands' approval, and the third model includes the interaction between women's age and husbands' approval. We summarize the results here. Of the three interactions, only the interaction between husbands' approval and women's age is statistically significant. The influence of husbands' approval of prenatal care on a women's use of prenatal care declines with a women's age. Among women under age 20, having a husband who approves of prenatal care increases the likelihood of using prenatal care by a factor of 3.5. Among women in their twenties and thirties, husbands' approval is still a very important determinant of prenatal care utilization, but the odds ratio drops to around 2. This finding is consistent with the expectation of somewhat greater decision-making autonomy among older married women.

Discussion

Studies of maternal health provide strong evidence of the beneficial effects of early prenatal care on fetal development and the birthing process. While cost and availability are major barriers to accessing prenatal care in many developing countries, lack of awareness of the importance of prenatal care and restrictions on women's health seeking behavior stemming from husbands' disapproval remain as important barriers to prenatal care utilization even in areas where services are available. Many interventions designed to increase maternal healthcare program awareness and acceptance focus on women's characteristics and attitudes. In this paper we used couple data on women's and men's characteristics and attitudes to examine the determinants of whether a pregnancy was wanted and husbands' approval of prenatal care and the relationship between the two; and to estimate the relative importance of husbands' approval on prenatal care. We found that husbands' approval of prenatal care has a greater influence on prenatal care utilization than whether the pregnancy was wanted and women's education. We also found that the impact of husbands' approval on women's health seeking behavior varied by women's age. Women under age 20 are more influenced by husbands' or partner's approval than women age 20 and above. **Our findings underscore the importance of targeting men for informational interventions designed to increase awareness and use of prenatal-care services.**

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The *Partnership in Improving Reproductive Health Background Reports* present findings from work in progress on the dimensions and determinants of fertility and reproductive health in Ethiopia. This work is being conducted by faculty and advanced graduate students at the following institutions:

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