Husbands' and wives' reports of women's decision-making power in Western Guatemala and their effects on preventive health behaviors

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ABSTRACT

Surveys have attempted to measure married women's decision-making power by asking women who has a say and/or final say in a number of household decisions. In several studies where the same questions were posed to husbands, considerable discrepancies in reports were found. This paper assesses husband and wife reports of decision-making on four matters (whether or not to buy household items; what to do if a child becomes ill; whether or not to buy medicine for a family member who is ill; what to do if a pregnant women becomes very ill) and the relationship of these reports to three recent health behaviors (having an emergency plan during pregnancy; delivering in a health facility; having a postpartum checkup within 4 weeks). A sample of 1000 women in 53 communities of three departments of western Guatemala was selected using a stratified random sampling approach. A standard household questionnaire was used to identify the respondents as well as to obtain data on household characteristics. Husbands of

interviewed women were interviewed in every other household giving information on 546 couples for this analysis. Women and men's questionnaires were similar and were designed to obtain information on the respondent's knowledge, attitudes and behaviors regarding maternal health.

Consistent with other research, results show that relative to their husbands' report, wives tend to under-report their household decision-making power. In couples with both partners educated and in couples in which women work for pay, both partners were significantly more likely to report that both of them participate in the final decisions than was the case in couples without education or in which the wife did not work for pay. Decision-making power of women as measured in this study was significantly related to the household having a plan for what to do in case of a maternal emergency, but was not associated with place of childbirth or with having a postpartum checkup.

For many decades it has been known that infant and child death rates are lower among children of educated mothers virtually everywhere (e.g. Hobcraft, McDonald and Rutstein, 1984). Fertility is similarly lower for educated and working women than for uneducated and non-working women throughout the world (e.g., see Martin 1995 for results from 26 countries). In effect, one could consider that these early studies were using women's education and/or labor force participation as proxies for women's status or empowerment.

More recently the concepts of women's status have been expanded from education and socio-economic status to include other less easily measured aspects such as women's access to and control over resources and decision-making power within the household (Mason, 1986). In developing countries, questionnaires in cross-sectional surveys have attempted to assess these aspects of women's empowerment and, in settings where women's status is low, have added another component–women's mobility outside the home or compound.

Women's status or empowerment as measured by these new variables has been shown in specific study settings to be a key variable for the decline of infant and child mortality (in Egypt by Kishor, (2000)), for women's use of prenatal care services (in Indonesia by Beegle, Frankenberg and Thomas, (2001)) for immunization of children (in Egypt by Kishor, (2000)), for seeking treatment for ill children (in Mali by Castle (1993)) and for

use of modern contraception (in India by Jejeebhoy, (2002)). In Guatemala, Glei *et al* (2003) found that married rural women who reported greater household decision-making power used biomedical services during pregnancy more often than those who reported less autonomy.

Following a couples' approach which has been advocated for reproductive health generally (Becker, 1996), two recent studies have compared reports of wives and husbands on aspects of women's empowerment and the relative effects of each spouse's reports on reproductive health outcomes. Jejeebhoy (2002), with data from couples in Tamil Nadu and Uttar Pradesh, India found that husbands and wives quite often had discrepant reports of the woman's level of empowerment as measured by questions on her mobility, her access to economic resources and her economic decision-making power *vis-à-vis* her husband and other significant actors.[1] Specifically, on the wife's involvement in three household decisions, the spouses gave discrepant reports in 25-50% of couples depending on the specific item. Jejeebhoy then considered four outcome variables: current contraceptive use, interspousal discussion of family planning, unmet

need for contraception and childbearing in the past five years. In Tamil Nadu, in logistic regressions for each outcome, when there were significant effects they were always for women's reports of her decision-making power, i.e. the coefficients of husbands' reports of her decision-making power were not significant. However, in Uttar Pradesh, the coefficients of husbands' reports of empowerment were significant in several instances while the coefficients for the variable for wives' reports were not. Uttar Pradesh is

known to be a more gender conservative context, while Tamil Nadu is more egalitarian (Mason and Smith, 2000), providing a possible explanation of the greater influence of women's reports of their own empowerment in the latter.

Ghuman, Lee and Smith (2004) used data from the same questionnaire from surveys carried out in selected areas in four other countries--Pakistan, Thailand, Philippines, Malaysia–-as well as India. They utilized a model for item response to compare husband and wife reports to examine systematic differences contrasted with random error. They found both systematic and random components to be present and concluded that men and women have different cognitive understanding of the questions. They studied the relationship of the husband and wife reports of empowerment with experience of child death and found effects in opposite directions–women's reports of their empowerment (on a scale from low to high empowerment) were negatively associated with mortality but husbands' reports of the same were positively associated with mortality and significantly so in India for one indicator of empowerment–whether it is the wife who

decides on discipline for the children or not.

Given these results, it can be argued that it is also important to ask women's empowerment questions to husbands, at least in certain settings and if the interest is in reproductive health outcomes. While this is consistent with a couple-approach to reproductive health, it would entail considerable increases in survey costs.

The purposes of the present analyses with survey data from Guatemala are two: first to examine the level of agreement between spouses on women's decision-making power in a Latin American context and second to determine whether wives' or husbands' reports of this empowerment have a stronger relationship with preventive health behaviors.

METHODS

Data for this study were collected as part of a household survey in 2003 by the Guatemalan Maternal and Neonatal Health (MNH) Program. The survey covered 53 communities in 19 districts in three departments (Quiché, Sololá and San Marcos) in the western region of Guatemala. The main purpose of the survey was to obtain information to measure the impact of the MNH Program interventions in Guatemala. A stratified random sampling approach was used to select a sample of 1000 women. First, the research team determined the number of households to sample proportional to the population size of each department: Quiché (27%), Sololá (35%) and San Marcos (38%).

Second, 53 communities were randomly selected from the 100 communities in these departments that were originally identified for program intervention by the Ministry of Health. The sampling design included stratification to ensure that different size communities were appropriately represented. Third, the research team enumerated all households in each selected community (using census maps and MOH drawings) and then randomly selected households (including replacement households). Fourth, at the

household level the team interviewed all women living in the selected household who were 15-49 years of age and who had had at least one birth in the 12 months prior to the survey, or who were currently pregnant. Husbands of interviewed women were selected in every other household with a completed woman interview. The interviewers visited 2,173 households and completed 1,098 women's interviews, and 546 men's interviews. The main reason (80%) for not having an interview in a household was because there was no woman in the household who met the required selection criteria; only 2.7% refused to participate in the interview.

A standard household questionnaire was used to identify the respondents as well as to obtain data on household characteristics. Women's and men's questionnaires were similar and were designed to obtain information on the respondent's knowledge, attitudes and behaviors regarding maternal health. There were four questions on household decision-making; they were the following:

In your home, who makes the final decisions on:

a. Whether or not to buy household items like a radio, TV, a cow or a beast?

b. What to do in case a child of the family becomes ill?

c. Whether or not to buy medicine for a person in the family who is ill?

d. What to do in case a pregnant woman in the household becomes very ill?

The possible response categories were: woman only, husband only, the couple (husband and wife), father-in-law, mother-in-law, father, mother, other. Identical questions were asked of each spouse.

As a first step in analyses, the responses were recoded into four categories: woman only, husband only, the couple, and other. Cross-tabulations of the spouses' reports for each decision-making variable were done to examine agreement. Then for use in the analyses of outcomes, a summary score variable was formed. For each of the four decisions, the response was coded 0 if the respondent said the husband alone or someone else had final say on the decision and 1 if the respondent said the wife or the couple had final say. These scores were then combined to give an overall index of decision-making power,

which then ranged from 0 to 4. For example a 0 score for one spouse means s/he reported that the wife does not have a final say (alone or with her husband) in any of the four decisions, while a 4 means she participates in all 4 decisions. For one multivariate analysis, these summary variables for each spouse were also combined to give a new variable with a range of 0 to 8. Thus in a hypothetical couple with a score of 8 both the

husband and wife say that the wife has a final say in all four decisions (either alone or as part of the couple).

We examined three behavioral outcomes from the responses to the following questions about preventive health behaviors for women who gave birth in the 12 months before the survey:

Did you prepare an emergency plan for the pregnancy, delivery and/or the postpartum period?[2]

Where was the baby born? (Responses were recoded to health facility or other)

During the first 4 weeks after ____ was born, did someone examine you and the child?

Other covariates that are important determinants of health behaviors and were available in the survey are:

place of residence (urban/rural)

age of the woman (in years)

level of schooling of the woman (none, primary, secondary, post-secondary)

ethnic group as indicated by mother tongue (Spanish, Mayan language)

number of children ever born

ownership of means of transportation (owns any of: horse, bicycle, motorcycle, car, truck)

ownership of household durable goods (radio, television, refrigerator, telephone). This was scored 0 to 4 according to the number of goods owned.

Analyses were undertaken to test the following specific hypotheses:

1. Relative to their husbands' reports, women underestimate their decision-making power or, said an equivalent way, relative to wives' reports, husbands underestimate their own decision-making power.

2. There will be greater agreement between spouses for the one matter typically considered a woman's domain--deciding what to do in case a child is ill--and the proportion agreeing that women have the final say will be greatest for this decision.

3. Agreement between spouses on decision-making increases with education of the woman.

4. Reports of "both" making the decision are most common in better- educated households and if the woman is working.

5. Women's decision-making power will be greater as reported by both spouses in urban

than in rural couples and among women whose mother tongue is Spanish compared to those whose mother tongue is a Mayan language.

6. Wives' reports of decision-making power will have a stronger relationship with their preventive health behaviors than will husbands' reports of the same, after adjustment for known confounders.

Simple cross-tabulations and chi-squared tests are used to test hypotheses 1 to 5. For hypothesis 6, logistic regressions are done for each of the outcome variables given above and including the covariates also listed above. For each outcome, four bivariate models and four multivariate models were run: each of the first four had only the empowerment score: 1) as reported by the wife, 2) as reported by the husband, 3) both scores and 4) the combined score. The second set of four multivariate logistic regressions had these same variables one at a time in addition to the other covariates listed above. Likelihood (lik) ratio tests were done of the differences in -2 ln (Lik) to test whether wife or husband scores give a better fit to the observed outcome data. Wald tests of coefficients were also used to test the effects of wife and husband scores. Finally pseudo-r^2 values for the regressions, which are comparable to the percentage of variance explained in linear regressions, were estimated. All tabulations and logistic regressions were done with STATA version 8 (StataCorp, 2003).

RESULTS

Table 1 gives selected univariate statistics of the covariates, the outcome variables and the decision-making variables. Women in the sample had an average of 3.4 children, the

mean age was 27 years, 53% had a Mayan mother tongue, 22% worked for pay and 35% had no formal schooling. Regarding outcome variables, for those with a recent birth 38% had developed a plan in case of emergency during pregnancy, delivery and the postpartum period, 27% had delivered in a health facility and 37% had a postpartum checkup within 4 weeks of delivery.

TABLE 1 ABOUT HERE

Table 2 gives the distribution of the joint responses of husbands and wives for the four decision-making questions. As can be seen, both partners reporting that the husband has the final say is the modal value for three of the four decisions. For what to do if a child is ill, this "husband-husband" category has the same percent as that in which each partner reported both. Summarizing the last 5 specifically labeled combinations in the table, women have the final say alone in fewer than 20% of couples as reported by either spouse for each of the four decisions. Also noteworthy is that there is little variation in the woman's influence on decisions across these four household matters, indicating that women and men either consistently reported that the wife had a say in household matters or did not. The wife was involved either alone or with her husband in the final decision from a low of 60% of couples with regard to what to do if a pregnant woman became very ill, to a maximum of 65% of couples with regard to what to do if a child is ill.

TABLE 2 ABOUT HERE

The empowerment scores combining the responses from the four questions are given in

Table 3. Note that the scores from women's reports were slightly lower on average than those given by their husbands. There is a clear U-shaped distribution for the reports with about 40% of both women and men saying the wife does not have a final say in any of the 4 decisions and about the same percentage saying she has a say in all 4 decisions (albeit via the 'both' response). For the combined score, the distribution is actually "W-shaped" with major peaks at both ends of the scale and a minor peak at the score of 4. This could be anticipated from examination of the first three rows of Table 2.

TABLE 3 ABOUT HERE

We now test each hypothesis in turn.

Hypothesis 1. Relative to their husbands' reports, women underestimate their decision-making power or, said an equivalent way, relative to wives' reports, husbands underestimate their own decision-making power.

Table 4 shows that there is a greater tendency for women to underestimate their decision-making power than to overestimate it. Of course this is relative to the husband's report -- specifically note that a case we label as the woman underestimating her power could equally well be labeled as a husband who underestimates his own power. For three of the four decisions, the percentage of wives who underestimate their power is significantly greater than the percentage who overestimate their power ($p<0.05$). The one decision where that is not the case is with respect to what to do for a sick child. Notwithstanding, the majority of couples agree on women's level of power within the household on these

four decisions (range of 67 – 74%).

TABLE 4 ABOUT HERE

Hypothesis 2. There will be greater agreement between spouses for the one matter typically considered a woman's domain--deciding what to do in case a child is ill--and the proportion agreeing that women have the final say will be greatest for this decision.

As seen in Table 2, the first part is clearly false; in fact there is slightly less agreement on this than on the other decisions. Also, the second part is only trivially true; while in only 1% of couples do both partners agree that the wife has the final say in the other 3 decisions, 2% of couples are in that category *vis á vis* who decides what to do for a sick child. Looked at another way, 65% of couples report that the wife is involved in the final decision on what to do if a child is ill, the greatest involvement compared to the other decisions investigated; however, for the remaining three decisions, a very comparable 64, 61 and 60 percent of couples report that the wife is involved.

Hypothesis 3. Agreement between spouses on decision-making increases with education of the woman.

Figure 1 shows the percentage of couples agreeing on the final decision-maker(s) for 1, 2, 3, or 4 of the household decisions, by education of the woman. From a chi-squared test of the data behind Figure 1, Hypothesis 3 is shown to be false ($p=0.64$). For those who agree on all 4 decisions, Table 5 gives the distribution of who that decision-maker is, by

education. For this sub-population, it is clear that educated women are more likely to be in partnerships in which both spouses agree that both have a final say in all 4 decisions, compared to less educated women. Among couples in which the wife has secondary education or above, 31% of the spouses agree that both partners have the final say together in all four decisions, compared to 19% and 15% for couples in which the wife has no education or primary education respectively ($p<0.05$ for test of equality of proportions).

FIGURE 1 AND TABLE 5 ABOUT HERE

Hypothesis 4. Reports of "both" making the decision are most common in better-educated households and if the woman is working.

Table 6 shows that the reports that both persons participate in the final decision vary significantly by both the educational level of the couple and whether the woman is employed or not. In couples in which both spouses are educated and in couples in which the woman is employed, a significantly higher percentage of both husbands and wives report that both partners are included in the final decision.

TABLE 6 ABOUT HERE

Hypothesis 5. Women's decision-making power will be greater as reported by both spouses in urban than in rural couples and among women whose mother tongue is

Spanish compared to those whose mother tongue is a Mayan language.

Table 7 shows that there are no differentials in reports of decision-making power according to urban/rural residence and mother tongue.

TABLE 7 ABOUT HERE

Hypothesis 6. Wives' reports of decision-making power will have a stronger relationship with their preventive health behaviors than will husbands' reports of the same, after adjustment for known confounders.

Estimates of the effects of women's and husband's reports of women's decision-making power on health behaviors from the bivariate logistic regressions and the multivariate regressions adjusting for other known confounders are given in Table 8. Women's decision-making power has a significant effect on whether the couple had a plan prepared for what to do in case of emergency during pregnancy, delivery or the postpartum period. The odds ratio is significant whether the woman's or husband's reports are used. When scores of each spouse are entered in the equation, only the report from the woman remains significant. The likelihood ratio tests were consistent with the Wald statistics in the regressions, (i.e., the addition of the wife's score to the model already including the score of the husband contributed significantly more to the fit than the addition of the husband's score to the model with the wife's score already included). In the prediction of whether the woman delivers in a health facility or not and whether she went with the infant for a postpartum checkup or not, women's decision-making power as reported by

either spouse or both spouses is not significant in either the bivariate or multivariate analyses. Pseudo-r^2 values were approximately 13% for the multivariate regressions for the plan variable, 29% for the regressions for the indicator of place of delivery and 10% for the regressions for the indicator of postpartum checkup (not shown).

TABLE 8 ABOUT HERE

DISCUSSION/CONCLUSIONS

The level of women's decision-making power in the household is one indicator of her empowerment. Consistent with other research we found that relative to their husbands' reports, wives tend to under-report their household decision-making power. Since the truth is obviously not known, this difference could alternatively be due to husbands' over-reporting of the decision-making power of their wives.

In couples with both partners educated and in couples in which women work for pay, both partners were significantly more likely to report that both of them participate in the final decisions than was the case in couples without education or in which the wife did not work for pay. This indicates that education and women's earning status are key components of her decision- making power within the household and thus helps refine recent research on the measurement of the new constructs for women's status (Mason, 1986; Kishor, 2000; Beegle, et al. 2001; Jejeebhoy, 2002). The influence of women's economic activity on decision-making was also shown in India in the more egalitarian setting of Tamil Nadu, but not in the gender conservative context of Uttar Pradesh

(Jejeebhoy, 2000), making the western Guatemala results consistent with the more gender egalitarian context. However, our hypothesis about differences in reported decision-making power by place of residence and mother tongue as proxy for ethnicity was not supported by the data, indicating that education and earning power supersede gender inequalities traditionally linked to indigenous women living in rural areas.

In households where the woman has no education, a larger proportion of couples agree

that the husband makes the decisions than is the case when the wife is educated (Table 5). About half of those couples across women's education groups either disagree about who the final decision-maker is or report a decision-maker other than a member of the couple. Fonseca-Becker and colleagues (2004a) in a related ethnographic case study for the Maternal Neonatal Health Program in western Guatemala, found that husbands were the principal decision-makers in getting their wives to a biomedical care setting for obstetric emergencies, and observed that mothers-in-law and traditional birth attendants also had considerable influence in the negotiation surrounding whether to seek skilled care. That is, in Guatemala men are still generally considered the main decision-makers, especially when the decision involves expenses, (also reported by Carter (2000)). In a study of wives' reports on their spouses' involvement in pregnancy and birth, when the decision being made related to an emergency situation that necessitated immediate funding for either transport or biomedical care, Carter (2002) found that wives considered their husbands to be the primary decision-makers. Dudgeon and Inhorn (2003) similarly cite a study in Benin where encouragement of biomedical health seeking behavior during pregnancy by a public health program paradoxically led to less decision-making power by women, as these medical services have higher associated economic

costs, still largely in the realm of male decision-making. The husband's education and occupational status were therefore predictive of the wife's use of these biomedical services – presumably because the higher status men will know of the importance of skilled care and be able to afford it for their families.

Decision-making power of women as measured in this study was significantly related to the household having a plan for what to do in case of emergency during the last

pregnancy, delivery and postpartum, but was not associated with place of delivery or having a postpartum checkup. This held true in both bivariate and multivariate analyses, so some other factor(s) is (are) more important for the place of delivery and postpartum checkup.

A recent study done in rural Yunnan province of China also examined the effects of women's status on maternity variables. Of the four status variables–autonomy, power in economic decision-making, husband sharing of household work and childcare, and women's travel and exposure to mass media, only the variable for husband's sharing in household work and childcare was significant *vis á vis* three of five outcomes (receipt of prenatal care, wife stopped heavy work before the birth and delivery under aseptic conditions). Interestingly, parallel to a finding in the present study, autonomy and decision-making power were not significantly related to whether a doctor/health worker delivered the baby (Li, 2004).

We can conclude from our regression results that, if the purpose of a study in this context is to determine the effects of wives' decision-making power on health-related outcomes,

then it is not essential to ask these questions of husbands as well since wives' reports of power were a better predictor than husbands' reports. On the other hand, the data from both spouses suggests that wives may be systematically underestimating their power, and that therefore to understand couple dynamics regarding household decisions, men need to be interviewed. Partner interviews could be conducted on a sub-sample of the population being studied.

It remains to explain why wives' level of decision-making power is not associated with whether they delivered in a health facility or had a postpartum checkup. One limitation of course is that the decision-making questions relate to the time of the survey, while the delivery and postpartum questions relate to a time somewhere in the 12 months before the survey. Also the questionnaire in the present study was limited in the information gathered about decision-making. A more detailed approach could be to ask how much each partner contributed to each decision (e.g. out of a total of 10 "votes" for each decision, how many votes did each person who was involved in the decision have).

More substantively, the percentage of women surveyed who believed that mothers and newborns *should* receive services from a skilled provider at delivery and postpartum is not 100%. Specifically, 67% of all sampled women in the same study area believed mothers should receive skilled care at delivery and 73% believed mothers and newborns should receive skilled postpartum care (Fonseca-Becker et al, 2004b). The effect of a woman's empowerment (operationalized as decision-making power within the household) would presumably be to further the wife's ability to act upon her own knowledge and beliefs. But if her knowledge and beliefs are that seeking skilled care at

delivery and postpartum is not necessary, then her empowerment would not be related to her receipt of such services. Furthermore, the outcome we assessed was *receipt of* skilled care and not *seeking of* skilled care. A higher percentage of women respondents said it was important to have skilled care during delivery than actually had a skilled attendant during delivery for their last birth (not shown). Even among women who had complications in that pregnancy, fewer than half sought the needed medical care at delivery and fewer than a fifth did so in the postpartum period (Fonseca-Becker et al,

2004c). Glei *et al*. (2003) and Carter (2002) similarly found that in rural Guatemala, even women who experienced a serious complication during pregnancy were more likely to seek care from a traditional birth attendant than from a biomedical provider. Guatemala retains traditional values and the cultural norm is still to deliver at home with the support of family and the traditional birth attendant, and, especially in rural areas, to use the hospital only in case of emergency.

We did not find differentials in reports of women's household decision-making power by urban/rural residence and mother tongue (a proxy for ethnicity). But Glei *et al* (2003) found that ethnicity was a very strong predictor of use of biomedical care during pregnancy, with Spanish-speaking women more likely than indigenous women to seek biomedical care during pregnancy. These findings support the theory that women's decision-making power does not mediate the relationship between ethnicity and receipt of this type of formal healthcare. Glei, *et al.* (2003) suggest that traditional cultural beliefs among the indigenous women combined with past negative experiences with the formal health system may mean that even in households where women have relatively high decision-making power vis-à-vis their husbands, they are predisposed to seek the

services of traditional birth attendants rather than those of medical doctors and nurses. An ethnographic case study in rural Guatemala (Fonseca-Becker, *et al,* 2004a) also showed that negative experiences with the formal health system were not uncommon among indigenous women, lending further credence to this reasoning.

With 153 maternal deaths per 100,000 live births, Guatemala has one of the highest maternal mortality ratios in the Latin American region (Duarte, et al. 2003). Most of these maternal deaths are preventable, e.g. 53% are due to hemorrhage (Guatemalan Ministry of Health, 2003). Planning for what to do in case of an emergency is a first step toward improving maternal survival in Guatemala, as reflected in the growing emphasis on birth preparedness indicators within Safe Motherhood programs (Stanton, 2004). Results from this research showing that women's decision-making power in the household is significantly related to the development of an emergency plan are important for program planners. Furthermore, the finding that there is often spousal agreement that men are the main decision-makers can help program planners working on maternal health to include men as targets for maternal health interventions. In addition, the finding that women who earn money are more likely to be included in the household decision-making could be used to obtain support for increasing economic opportunities for women following the example of the Grameen Bank in Bangladesh (e.g. Schuler and Hashemi, 1994) .

Even if wives do believe in skilled care, and did have a final say in whether they receive

this care at delivery and postpartum, and negotiate to seek it -- the health care facilities for these visits are often distant from their homes and often charge fees for services, (i.e., actual receipt of services would be influenced by additional external factors related to social and economic resources available to the household). Roth and Mbizvo (2001) explain that for health care systems to function adequately, people must not only be aware and motivated to seek this care, but also be sufficiently empowered to use these services. Empowered in this context encompasses not only household decision-making

power, but also the wherewithal to arrive at and receive services from care providers. In the present analyses, we have studied only the household decision-making component of women's empowerment. This addresses the first delay (deciding to seek care) in Thaddeus and Maine's (1994) conceptual framework on the three delays contributing to maternal mortality. It would be instructive to explore the remainder of the equation in bridging the second delay (identifying and reaching a medical facility) and third delay (receiving adequate and appropriate treatment) in a multi-stage analysis. This would require a larger, possibly prospective, data set.

Footnotes

1. With regard to mobility, the question was: (Do you) (Does your wife) have to ask permission (from you) to go to: the local market, a nearby fair, the next village..... With respect to decision-making the question was: Please tell me who in your family decides the following: what food to buy for family meals, what food to prepare for family meals; whether to purchase major goods for the household such as a TV and with regard to access to economic resources. The questions related to women's say in how household income is spent, whether she receives cash to spend, whether she is free to purchase small items of jewelry and whether she is free to purchase gifts.

2. In the questionnaire these were three separate questions but we have combined the responses because in all but nine couples the responses were either all yes or all no.

REFERENCES

Becker, S. (1996). Couples and reproductive health: A review of couple studies. *Studies in Family Planning* 27(6), 291-306.

Beegle, K., Frankenberg, E. & Thomas, D.(2001). Bargaining power within couples and use of prenatal and delivery care in Indonesia. *Studies in Family Planning* 32(2), 130-146.

Carter, M. (2002). Husbands and maternal health matters in rural Guatemala: wives' reports on their spouses' involvement in pregnancy and birth. *Social Science & Medicine* 55, 437-450.

Castle S.E. (1993). Intra-household differentials in women's status: household function and focus as determinants of children's illness management and care in rural Mali. *Health Transit Rev.* 3(2), 137-57.

Duarte, M.R., Aviles, J.M., Cardenas, J.O., Cordon, M.C., Bojorquez, Duarte, E., Colindres, J.G. (2003). *Informe Final: Linea Basal de Mortalidad Materna para el Año 2000.* Ministerio de Salud Publica y Asistencia Social, Guatemala City, Guatemala.

Dudgeon, M.R., & Inhorn, M.C. (2004). Men's influences on women's reproductive health: medical anthropological perspectives. *Social Science & Medicine* 59, 1379-1395.

Fonseca-Becker, F. & Schenck-Yglesias, C. (2004c). *Measuring the Effects of Behavior Change and Service Delivery Interventions in Guatemala with Population-Based Survey Results* JHPIEGO/Maternal and Neonatal Health Program: Baltimore, MD..

Fonseca-Becker, Ainslie, R., Bergen, G. Borda, M. Schenck-Yglesias, C., Cordon, O. & de Leon P. (2004b). Mobilizing for Impact: Engaging Guatemalan Communities to Save Mothers. Available at: www.jhuccp.org/pubs/cp/mobilizing/Mobilizing__eng.pdf.

Fonseca-Becker, F., Cordon, O., Schenck-Yglesias, C., Hurtado, L., Valladares, R., & Ainslie, R. (2004a). Case Study Report: Impact Evaluation, Community Mobilization and Behavior Change, Maternal and Neonatal Health Program, Ministry of Health and Public Assistance of Guatemala. *Johns Hopkins University, Bloomberg School of Public Health, Center for Communication Programs*, Baltimore, MD. Available at www.jhuccp.org/pubs/cp/MNHGuatemala/casestudywithcover_English.pdf

Ghuman, S. .J, Lee, K.J. & H. L. Smith, H. L. (2004). Measurement of Women's Autonomy according to Women and Their Husbands: Results from Five Asian Countries. *PSC Research Report 04-556*.

Glei, D.A., Goldman, N. & Rodríguez, G. (2003). Utilization of care during pregnancy in rural Guatemala: Does obstetrical need matter?. *Social Science & Medicine* 57, 2447-2463.

Guatemalan Ministry of Health. (2003). Lineamientos Estratégicos para Reducir la Mortalidad Materna. *Ministerio de Salud Pública, República de Guatemala*.

Hobcraft, J. McDonald, J.W. & Rutstein, S. O. (1984). Socio-economic factors in infant and child mortality: A cross-national comparison. *Population Studies* 38(2), 193-224.

Jejeebhoy S.J. (2000). Women's Autonomy in Rural India: Its Dimensions, Determinants, and the Influence. (pp. 204-238) In, Harriet B. Presser and Gita Sen (eds.). *Women's Empowerment and Demographic Processes* Oxford: Clarendon Press.

Jejeebhoy S.J. (2002). Convergence and divergence in spouses' perspectives on women's autonomy in rural India. *Studies in Family Planning*. 33(4),299-308.

Kishor, S. (2000). Empowerment of Women in Egypt and Links to the Survival and Health of Their Infants. (pp. 119-158) In H.B. Pressor and G. Sen (eds.), *Women's Empowerment and Demographic Processes: Moving Beyond Cairo*. New York: Oxford University Press.

Li, J. (2004). Gender inequality, family planning, and maternal and child care in a rural Chinese county. *Social Science and Medicine* 59, 695-708.

Martin, T.C. (1995). Women's education and fertility: Results from 26 Demographic and

Health Surveys. Studies in *Family Planning* 26(4), 187-202.

Mason, K. (1986). The status of women: Conceptual and methodological issues in demographic studies. *Sociological Forum* 1(2), 284-300.

Mason, K. & Smith, H.L. (2000). Husbands' versus wives' fertility goals and use of contraception: the influence of gender context in five Asian countries. *Demography*

37(3), 299-311.

Roth, D.M. & Mbozyo, M.T. (2001). Promoting safe motherhood in the community: the case for strategies that include men. *Afr J Reprod Health* 5(2), 10-21.

Schuler, S.R. & Hashemi, S. M.(1994). Credit programs, women's empowerment, and contraceptive use in rural Bangladesh. *Studies in Family Planning*, 25 (2), 65-76.

Stanton, C. (2004). Methodological Issues in the Measurement of Birth Preparedness in Support of Safe Motherhood. *Evaluation Review* 28(3), 179-200.

STATACorp. (2003). *STATA Reference Manuals*. *Release 8.0.* College Station, Texas.

Thaddeus, S., & Maine, D.(1994). Too Far to Walk: Maternal Mortality in Context. *Social Science and Medicine*, 38(8), 1091 – 1110.

Table 1: Descriptive statistics for covariates and outcome variables for 546 couples, three departments of western Guatemala, 2003.

COVARIATES	
	Means
Number of children ever born	3.4
Age	26.8
	Percentages
Woman works for pay	22
Woman's mother tongue a Mayan language	53
Woman's Schooling: none	35
Primary	44
Secondary+	20
Household owns a means of transport	48
No. of household items owned[a] 0	14
1	34
2	26
3	11
4	14
OUTCOMES (for those with a birth in past year; n=391)	
Had a plan for emergency during pregnancy, delivery and postpartum period	38
Delivered in a health facility	27
Postpartum checkup within 4 weeks after delivery	37

[a] Radio, telephone, refrigerator and television (each coded 0 or 1 and these are added).

Table 2: Percent distribution of husband's and wife's joint responses on who has the final say in four household decisions (n=546 couples), three departments of western Guatemala, 2003

Respondent and person reported to have the final say		Household matter that requires a decision			
		Buying articles for the house	What to do if child is ill	Whether or not to buy medicine for a person in the family who is ill	What to do if a pregnant woman became very ill
Wife's report	Husband's report				
All combinations		100	100	100	100
Wife not involved in final decision					
Husband	Husband	37	31	34	38
Wife involved in final decision alone or as part of couple					
Both	Both	34	31	31	29
Husband	Both	11	8	10	10
Both	Husband	8	9	8	8
Wife	Both	1	3	3	2
Wife	Husband	1	4	3	2
Husband	Wife	3	4	4	5
Both	Wife	2	4	4	3
Wife	Wife	1	2	1	1
Other combinations		3	4	3	3
PERCENT AGREEMENT		74	66	67	69

* Percentages may not add to 100 due to rounding.

Table 3: Derived score for women's decision-making power in four household decisions as reported by the woman alone, the husband alone and a combined score from reports of both partners for 546 couples in Three departments of western Guatemala.

Score	Spouse reporting		
	Wife	Husband:	Combined[a]
0	42	40	30
1	6	5	4
2	8	4	4
3	7	9	4
4	38	42	14
5			5
6			6
7			7
8			27
mean	1.94	2.07	4.00

[a] Scores for each spouse are simply added for the combined score.

Table 4: Percent of wives who under and over-estimate their decision-making power relative to their husbands' reports, by type of decision

Relative to husband's report the wife:	Decision			
	Buying articles for the house	What to do if child is ill	Whether or not to buy medicine for a person in the family who is ill	What to do if a pregnant woman became very ill
All wives' reports	100	100	100	100
Underestimates her decision-making power[a]	16*	17	19*	19*
Over-estimates her decision-making power[b]	10	16	14	11
Other reports[c]	74	67	67	70

* $p < 0.05$ for test of equality of proportions over and under-estimating.

[a] The woman underestimates her power relative to the husband's report if she reports that the husband or both or others have the final say when he reports that she has the final say or if she reports that he or others have the final say when he reports that both do.

[b] The woman over-estimates her power relative to the husband's report if she reports that she has the final say and he reports that either he or both have the final say or if she reports both have the final say and he reports that he does.

[C] Nearly all of these couples agree on who has the final say but this group also includes 1-2% for each decision in which one spouse says 'other' and the partner says husband, wife or both.

Table 5: Percent of couples who agree on the person with the final say in four household decisions, by who they report has the final say and education of the wife

Education of the wife	Number of couples	Reported person(s) who make(s) the final decision for all four decisions			Percent who disagree on at least one item or report another decision-maker
		Husband	Both partners	Wife	
No education	193 (100)	32	19	1	49
Primary	243 (100)	29	15	0	55
Secondary+	110 (100)	19*	31	0	50

* $p < 0.05$ for test of equality of percentages reporting that the husband makes the final decisions vs. other categories, across education groups.

[a] Couples in which partners disagree on who makes the final decision on at least one of the four household decisions.

Table 6: Percentage of wives, husbands and couples who report that both partners are involved in the final decision regarding four decisions, by education of the couple and employment status of the wife for 546 couples in three departments of western Guatemala.

Who reports both are involved in final decision	Education of the couple			Woman's employment status	
	Both without education (n=220)	Both with education (n=326)		Not working for pay (n=425)	Works for pay (n=121)
Wife only	7	5		6	4
Husband only	5	6		7	2
Both	35	45**		36	58 **
Other reports[a]	53	44		51	34

** $p < 0.01$ for the test of the hypothesis of equality among educated and uneducated couples and between working and non-working women.

[a] All couples in which one or both partners did not report that both were involved.

Table 7: Percent of couples in which both spouses report that the wife is involved in the final say for four household decisions, by place of residence and mother tongue of the woman

Report of wife's involvement in decision-making	Place of residence			Mother tongue	
	Urban	Rural		Spanish	Mayan language
All couples	100	100		100	100
Both spouses report the wife has or is involved in final decision	27	26		26	28
Other reports	73	74		74	72

Table 8: Estimated odds ratios from bivariate and multivariate logistic regressions with women's report (score) of decision-making power, husband's report (score) and a combined score, for three preventive health outcomes, three departments of western Guatemala (n=391 couples in which the woman gave birth in the past year)

Decision-making score based on report from	Outcome variable and statistical model							
	Plan for pregnancy, delivery and postpartum period			Delivered in health facility			Postpartum checkup	
	Bivariat	Multivariate		Bivariate	Multivariate		Bivariate	Multivariate
Woman only	1.35**	1.32**		(1.04)	(0.98)		(1.03)	(0.97)
Man only	1.29**	1.26*		(1.01)	(0.90)		(1.04)	(0.97)

Both separate								
man's	(1.14)	(1.12)		(0.99)	(0.88)		(1.04)	(0.98)
woman's	1.26**	1.25**		(1.05)	(1.05)		(1.01)	(0.98)
Combined score	1.20**	1.18**		(1.02)	(0.96)		(1.03)	(0.98)

* p< 0.05; ** p<0.01; ( ) p > .05;

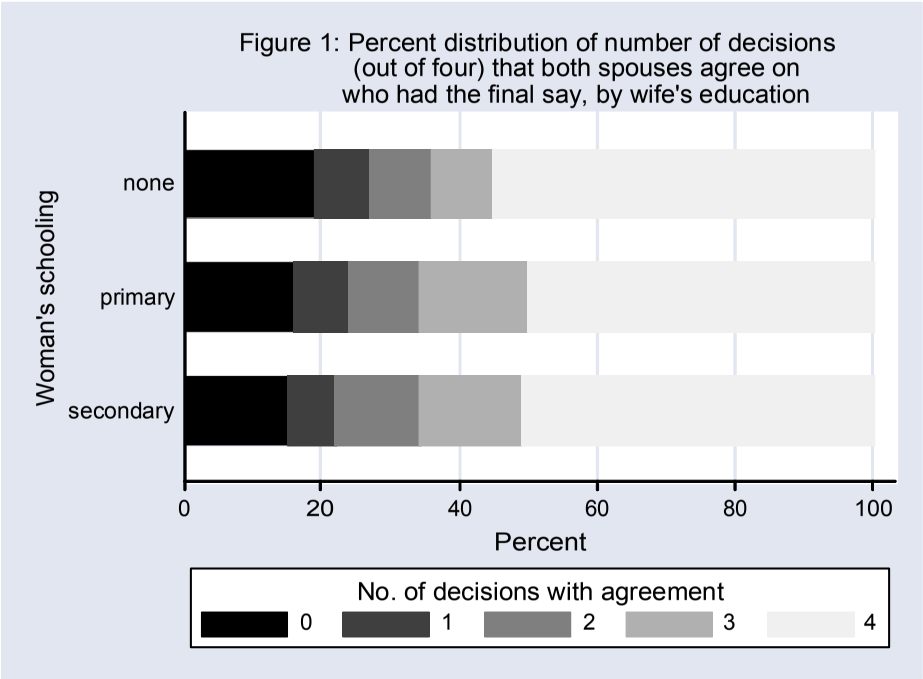
Figure 1: Percent distribution of number of decisions
(out of four) that both spouses agree on
who had the final say, by wife's education
Woman's schooling
none
primary
secondary
0
20
40
60
80
100
Percent
No. of decisions with agreement
0
1
2
3
4