Husband Involvement in the Prevention of Maternal Ill-health: the Determinants of Husband Domestic Support in Rural Low-land Nepal

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Introduction

With a maternal mortality rate of 539 per 100.000 live births, maternal health is of much concern in Nepal. In general, the availability and quality of (emergency) obstetric services is inadequate while the utilisation of maternity health services is lower in Nepal compared to other countries with similar infrastructure. Jahn *et al.* (2000) observe that cultural barriers, perceived low quality of care, perceived discrimination of rural people, and the lack of a perceived health gain are at the roots of under utilisation of services. One of the consequences is that most of the deliveries take place at home (89%) (Ministry of Health 2002). This situation makes the social environment at household level and the role of men therein of relative importance to any preventive measures concerning maternal ill health.

Particularly at community and household level, maternal health is considered a gender issue.[2] A cross-national study of 79 developing countries found that women's status is a strong predictor of maternal mortality (Shen *et al.* 1999). A study of women's autonomy and use of maternal health care services in Uttar Pradesh, India, found that women with greater freedom of movement obtained more antenatal care and were more likely to use safe-delivery care (Bloom *et al.* 2001).

In reproductive health, the male involvement discussion has developed mainly around contraceptive use, STDs and HIV. Comparatively, little research and few programs focus on men's relationships to maternal health, though the need for information in those area's of health is no less compelling (Carter 2002).) Exceptions include studies by Bloom *et al.* (2000),

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[2] Gender systems are social institutions that ascribe the social characteristics of men and women, which provide meaning and guidance with regard to their roles, rights and obligations over the life course. As such they contribute to people's mental schemes and influence their decisions and behavior. Gender is inherently about relations between women and men, as well as relations among groups of women and among groups of men.

Raju and Leonard (2000), Wall (1998), Johanson et al. (1998) Bhalerao *et al.* (1984). Clark et al. argue that one of the challenges for men's participation in reproductive health is the as yet untapped potential to help reduce maternal mortality, ' as there is clearly a potential for a much greater role of men in safe motherhood initiatives' (1999). Others have specified how men could help in safe motherhood: by providing resources and transport for ANC, and accompany women there if they want this; by arranging for skilled attendance during delivery; by knowing the danger signs of complications and avoiding delays in decision-making and transport; by ensuring good nutrition, rest and alleviating women's workload during pregnancy and postpartum, as well as the related physical, financial and emotional support. (Drennan 1998; PATH 2001).

The present paper pays attention to the relief of women's workload during pregnancy by men. In Nepal, it is common for couples to start their married live in the household of the husband. The new daughter-in-law takes up her position and role in the household. As for other events her pregnancy is imparted in the social system of the household, and her vulnerability in the sense of being young, relatively new in the family of her husband, pregnant and being a women makes her dependent on other members of the household. Historically and physically, pregnancy and childbirth have mainly been a women's issue. However, with the change in household and family composition from large extended families towards smaller and nuclear families, other women are not always available and more support in daily activities is required from men and husbands in particular.

Given the need for information on male involvement in maternal health in Nepal and the dearth of results internationally, in 2002 the Netherlands Interdisciplinary Demographic Institute (NIDI) in collaboration with the Centre for Research on Environment, Health and Population Activities and Amaa Milan Kendra implemented a Safe Motherhood Male Involvement research project (SMMI) in Morang District, Nepal. Morang District has a relative higher socio-economic standard compared to the rest of Nepal. Compare to all 75 districts of Nepal, Morang District ranks 11 on the Composite Development Indicator and has rank 13 and 29 on the Population Deprivation Index and Women Empowerment Index respectively (ICIMOD 1997). It borders India in the South and is located in the terai region.

The overall objective of the Nepal SMMI research project is to reduce maternal morbidity and mortality in Nepal. The purpose is to study the nature, prevalence and determinants of male involvement in the *prevention of* and *response to* ill health of pregnant women. International

consensus suggest that prevention in the sense of good nutrition, appropriate workload, and regular medical care visits of pregnant women have less impact on maternal health than appropriate responsive behaviour in case of obstetric complications (Ormel 2003). However, prevention is nonetheless regarded one of the critical domains of research for male involvement in safe motherhood.

Theoretical Background

A model on the behavioural determinants of maternal health at household level guides the Nepal SMMI research project and is graphically represented in Figure 3. The model is based on the conceptual framework of safe motherhood by Tinker and Koblinsky (1993). This conceptual model includes context, intermediate, proximate, and outcome dimensions of safe motherhood. Furthermore, the model in Figure 3 is based on the process-context approach developed by Willekens (1990) and de Bruijn (1999) and relates individual behaviour of household members to maternal health outcome through intermediate variables.

The process-context approach integrates three basic conceptual components that are firmly grounded in social and psychological theory: choice, process and context. The approach takes individual's rational considerations as its core assumption about human behaviour. Several theoretical psycho-social behaviour models are associated with this concept of choice: the Reasoned Action Model (Ajzen and Fishbein 1980), the Health Belief Model (Becker 1974; Rosenstock et al. 1994) and Bandura's Social Cognitive Theory (Bandura 1977). Furthermore, the approach acknowledges that individual behaviour is decisively located in a social environment or context that provide people with the mental schemes. These schemes generate decision components like motivation, representation and efficacy (de Bruijn 1999; cf. Hutter and Ramesh 2003). Lastly, the approach acknowledges that individuals are in a continuous process of development that take them through different life stages, which imply different needs, expectations, constraints and opportunities (Levinson et al. 1978; Willekens 1991).

The model in Figure 3 recognizes contextual determinants, including socio-economic and cultural components and belief systems, and psycho-social determinants of individual behaviour. The relationship between psycho-social factors and behaviour has been worked out in detail in the theory of reasoned action by Ajzen and Fishbein (1980). This value expectancy theory is referred to in the model. It assumes that individuals consider the consequences of their behaviour before they actually perform it. This reasoned behaviour is assumed to be

preceded by an intention to behaviour. A person's intention to perform certain behaviour in turn is determined by two factors, a personal one and a factor reflecting social influence. The personal factor, the attitude towards the action is defined as the – negative or positive – evaluation of performing the behavior. Attitude in turn, is determined by beliefs regarding the consequences of a particular action and the evaluation of such consequence. The factor reflecting social influence is the subjective norm, which is constituted by the person's beliefs that specific individuals or groups think he or she should or should not perform the behaviour (normative beliefs) and the motivation to comply to these others. In other words the subjective norm is the individual's perception of social pressure to perform or not to perform certain behaviour . In an extension, the theory of planned behaviour, Ajzen (1992) added perceived behavioral control, which consists of people's perception to perform behaviour (motivation) and the perceived behavioral control (ability). This means that people's behaviour is strongly influenced by their confidence in their ability to perform it. Past experiences with the particular behaviour are mentioned as the most important factors affecting perceived behavioral control. Intention to behave is thus determined by attitudinal and normative considerations and perceived behavioral control. An intention to behave does not always result in actual behaviour: there might be an intention to behave and even perceived ability to do so, but no possibilities to perform.

The model in Figure 3 relates individual behaviour of household members to maternal health outcome through intermediate variables, that we call maternal health risk behavioural factors. These risk factors are behavioural determinants of maternal ill health. For example, to draw a parallel, they can be compared with smoking behaviour: smoking is a health risk factor for general health. Maternal health risk factors are preventive or responsive by nature. Health risk behavioural factors that relate to the prevention of maternal ill health include a too high workload of the pregnant women, insuff9icient nutrition and antenatal medical care seeking. Health risk behavioural factors that relate to responsive actions upon ill health are derived from the delay model of Thaddeus and Maine (1990). Risk factors include the delay to recognise a maternal health problem or complication, the delay to decide to do something about it and the delay, and the delay to reach the health facility. The delay at the health facility to receive treatment is assumed to be outside the scope of influence of household members and is not included in the model.

We apply the extended framework to our study and integrate all possible determinants of men's behaviour during fatherhood in one model of the determinants of men's behaviour during fatherhood (Figure 3). The model explicitly stipulates the background variables related to beliefs of men and important others and motivational compliance. An important objective of the study is to illustrate how men's behaviour during fatherhood takes place within a social, economic and cultural context.

Analytical focus

The focus of the present paper is on the prevention of pregnancy complications at household level. The analysis focuses on two main questions. First, what is the nature and extend of husband involvement in providing domestic support to their pregnant wife? We hypothesise that husbands are not heavily involved in providing domestic support and ensuring rest for their pregnant wife. Second, why are husbands involved or not involved in domestic chores? In other words, what are the determining factors of husbands involvement? The grey marked area's in the model of Figure 3 indicate the locus of research of the present paper.

Given the theoretical background, information from secondary resources and findings from preliminary qualitative fieldwork we pay particular attention to the factors listed below and how they relate to husband's behaviour in domestic chores. We have grouped these factors into four main categories. The categories represent factors that relate to personal, interpersonal, household and context characteristics. As usual, the categories are loose approximations, since the theoretical classification of some factors is unclear given their likely correlation with other factors. Nevertheless, the distinction is regarded important for determining best levels of intervention. The categories and factors are graphically represented in Figure 4.

Husbands characteristics Whether a husband lives in the household with his wife and family and is therefore available to provide assistance is effected by gendered forces of job opportunity and migration. In Morang, usually men are the breadwinner and their time to be availabe in the household is limited. We hypothesise that husband's perception of the time that he has available is positively associated with domestic support.

Traditional beliefs on health and health care have a bearing on husband's role in maternity (Wadenya, 1999; Manadhar 2000). Ignorance on health benefits from modern services and adherence to traditional health beliefs and remedies, for example the belief that pregnancy related complications are caused by witchcraft, are assumed to negatively effect domestic support. Similarly, husbands who do not view their wife as equal partner, for example they justify beating her, are assumed not to support her much in household chores during her pregnancy.

Findings from qualitative fieldwork elucidate that social pressure on men is an important barrier for a men conducting tasks that are assumed to belong to the domain of women. A husband assisting his wife has fears of being regarded 'maugiya' (a term for hen pecked husband among terai communities) or 'joitingre' (for hen pecked husband among hill communities). These terms are used for teasing a man involved in household work.

Bloom et al. in their study on husbands' knowledge about reproductive health in Northern India (2000) conclude that that men know very little about maternity complications. Similarly, for Nepal Manandhar (2000) and Wadenya (1999) find that men's awareness of the problems and risks women face during pregnancy and delivery is very low. Therefore, creating conditions that encourage husbands to act for the benefit of the health of their wife, education and husband's knowledge on maternity issues is assumed to positively influence husband's behaviour in domestic chores.

Wife's health risk characteristics In terms of health related motivational aspects of husbands behaviour, we hypothesise that higher vulnerability to ill-health of the pregnant wife, whether this is related to pervious ill health or obstetric problems, is positively associated with husband's support in domestic chores. The relationship is regarded more ambiguous for first order pregnancies compared to higher order pregnancies. The first time that a husband's wife is pregnant could either be characterised by ignorance and passiveness or trigger action out of curiosity and concern. The latter could induce higher levels of domestic support, the latter lower levels.

Spousal characteristics Drennan (1998) and others argue that couple communication can be a crucial step towards increasing men's participation in reproductive health. Communication between partners may not be desirable, as women may submit to men because they are afraid

of retaliation, such as being beaten or divorced, and because their gender roles place them in subordinate positions in society. Together with marriage 'out of love', defined as a marriage that is not arranged by others than the couple themselves, the level and content of spousal communication can be regarded representative of the quality of the relationship. Quality of the spousal relationship is assumed to have a positive effect on husband support in domestic chores. We hypothesis that communication on maternal matters and 'love marriage' positively effect husband's domestic support to his pregnant wife.

Household decisions in Nepal are predominantly made by male members (UNICEF 1998), although other studies contrast these results for subregions (Wadenya 1999; Manandhar 2000; Samanata 2000). In his literature review Ormel (2003) observes that male decision-making varies according to the topic at hand (more in family planning, less in safe motherhood) and between the different ethnic and cultural backgrounds of the Nepalese population groups. More authority of the husband may undermine the status of his wife. We therefore hypothesise that husband's authority in decision making negatively effects his domestic support during pregnancy of his wife.

Differences in age and education between spouses could influence the way they behave. A women having attained more education then their spouse is expected to show influence in the relationship and is likely to be more supported by their husband, compared to when the husband has a higher educational level. The influence of difference in age of spouses is more ambiguous. Similar to differences in education, relative older women may be expected to exert influence in the relationship, thus expecting a supportive husband.

Household and context characteristics In terms of composition of the household, we hypothesise that a small household with no other adult women than the pregnant wife is positively associated with husband domestic support, whereas presence of other women an active involvement of for example the mother-in-law negatively effects husband's support in domestic chores.

According to research by Niraula and Morgan (1995, 1996) people originating from the hills allow dramatically different degrees of women's autonomy compared to the terai population. Freedom of movement and wife's household decision making power are markedly higher in

the *hill* than in the *terai* setting. It is assumed that husbands from terai communities are less inclined to provide domestic support.

Gender is the system that structures the relationship of power and the meanings of difference between males and females. Gender factors are assumed to play a key role in husbands'support in domestic chores and are represented in the four categories, particularly in the perception of husband's social pressure, his view on health and gender, in spousal relational aspects like communication and authority in decision-making, and also in education and ethnic origin.

Data sources and methodology

The SMMI Nepal serves as the basis for this analysis. Data was collected in 2002. The project was funded by the European Union and NIDI and implemented by staff of NIDI in collaboration with researchers from Crehpa.
Qualitative research included focus group discussions, key informant interviews and case studies on obstetric complication histories. FGDs were conducted among adolescent boys and girls, married men with and without children, married women with and without children, mothers-in-law and fathers-in-law. Key informant interviews were conducted with health providers and community leaders. Unstructured interviews were conducted in the case studies for husband and his wife were separately.

Twenty eight VDC's of Morang District of Nepal[3] constitute the study population of the present study. A two-stage sampling procedure was applied with the ward as PSU (the smallest administrative unit in the 1991 Population Census). In the first stage, 20 wards or sub-wards (the PSUs) were selected with probability proportional to size (PPS), using the number of households in the ward as the measure of size. After the random selection of the wards, a complete enumeration of households in the sampled wards was conducted in order to select and identify the households to be interviewed. In the second stage, after completion of the household listing, a sampling frame was constructed of the household that have eligible respondents (ever-pregnant married woman 15-24 years & her husband) From this sampling frame 30 households were selected using systematic random sampling. Complete interviews

could be obtained from 595 ever-pregnant married women aged between 15-24 and their husbands (445). In addition, the mother-in-law or the father-in-law, if residing with the index couples, were also interviewed using separate sets of questionnaires.

Data was collected at individual and household level on demographic, socio-economic and cultural background characteristics and knowledge, attitude and behavior regarding male participation in safe motherhood. The questionnaires were translated into Nepali and pre-tested in two representative villages of Morang district that were not included in the survey. Preliminary results of the qualitative research were used in developing the questionnaires.
Field work was carried out in September and October 2002 by 25 fieldworkers working in 5 teams. Each of them consisted of at least 2 males and 2 females, respectively interviewing male and female respondents. The fieldworkers, experienced in reproductive health data collection, were intensively trained for 5 days.

One hundred fifty husbands could not be interviewed mainly due to migration, either within Nepal (28%) or abroad (61.3%). The rest (10.6%) could not be met in 3 visits or were incapable to communicate. Demographic and socio-economic information of these husbands was collected by report of their spouse. Level of education and wealth status were slightly higher in this group compared to the 445 matched husband and wives that were interviewed. The absence of this group may impose a bias on the results.

Besides generating descriptive measures and bivariate correlation coefficients s of all variables, we perform ordinary least squares regressions, resulting in 5 multivariate models. They represent sets of explanatory variables based on the four categories: husband characteristics, wife's health risk characteristics, spousal characteristics and household characteristics.

Dependent variable

The dependent variable is defined husband involvement in domestic chores during the last pregnancy of his wife. Information is derived from questions about his involvement in domestic chores 'During the time that your wife was last pregnant how often did you do the following things? Wash clothes, wash dishes, cook, clean the house, fetch water, advised her not to do heavy lifting?' These questions were scored on a 5-point scale ranging from 1

[3] Morang has 65 VDC's (sub districts). 37 VDCs were a priori excluded from the sample, because of possible influence from ongoing reproductive health interventions/studies and Maoist Movement affected areas.

(never) to 5 (always). On the basis of the answers to the questions (mean r=.44 (.24-.66); see table 5) a scale was constructed by calculating the unweighted mean of standardised scores and linearly transforming it into a scale on husband's activity level in domestic chores ranging from 1 (indicating very low assistance) to 10 (indicating very high assistance). A similar question 'during the time that you were pregnant how often did you look after the children' had an acceptable correlation to the mentioned questions, but was not included in the scale, because not all couples did have children at the time of the survey. Inclusion would have reduced the statistical power of the analysis.

Independent Variables

Variables in the statistical analysis are grouped in (sub) categories, following the substantive focus outlined above. The method of measurement of the independent variables will be described here. For an overview of the independent variables by (sub) category the reader is referred to Figure 4. Table 2 presents means and percentages of the variables.

Husband's characteristics The time that a husband can be available was measured asking them if they had enough time to support their pregnant wife with domestic chores (1=yes; 0=no). Social pressure concerning husband's involvement in domestic chores that are normally considered women's domain, is measured by asking them whether they feared being regarded "maugiya", that is being hen packed by their wifes (for terms see explanation in section …) (1=yes; 0=no). In order to assess their belief system a series of questions were asked. These included their agreement or disagreement with 22 statements and questions on attitude. Principle component analysis was applied to explore the concepts behind these statements. Two main dimensions were distinguished. The first can be described as 'traditional health beliefs', including the following 8 statements: when a women dies during childbirth it is due to fate, pregnancy related illnesses/complications are often caused by witchcraft, sacrificing an animal for safe delivery is good, intake of water chanted from a traditional healer is good, been seen by a traditional healer before going to a doctor is good, wishing something for God is good, anything domestic is women's work, family planning is a women's issue (alpha=0.829). An index measure (scale 0-8) was derived from the statements and divided into three categories to adapt for skewness (median=3,0, mean=3,5): traditional (0-1), indifferent (2-4), modern (5-8).

The second dimension can be described as 'gender vision', or in other words the perceived value of the status of women, including 3 questions on the tolerance for gender based violence: In your opinion is a husband justified in hitting or beating his wife in the following situations a. if she neglects the children, b. if she argues with him, and c. if she refuses to have sex with him. (yes/no)' An index measure (scale 0-3) was derived from the statements and divided into two categories to adapt for skewness (median=0,0, mean=,586): gender equality high (0), and gender equality low (1-3).

In addition, the level of knowledge of the husband on maternal matters and attained educational level were included. From multiple response questions on knowledge of danger signs and reasons for having regular medical check-ups during pregnancy, three dummy variables were created: Husband can mention 2 or more dangers signs that indicate that a pregnant or delivering women is having serious problems; he can mention 2 or more dangers signs related to the neonatal period; and he can mention 2 or more appropriate reasons for having a health check-up during pregnancy. A score of 1 in each of these variables indicates a relative sufficient level of knowledge on maternal issues (1=knowledge sufficient, 0=knowledge not sufficient). Educational attainment was divided into 3 categories, no education, primary level and secondary level or higher.

Wife's health risks characteristics Three variables were constructed to measure the influence of factors related to the health risks of pregnant wives. One was whether the last pregnancy concerned a first order birth (1=first order, 0=all other). Another factor included in the analysis was the health status of the women. Perceived obstetric problems by the wife during her last pregnancy (1=obstetric problem, 2=no obstetric problem) and perceived obstetric problems by the wife in pregnancies before the last one were calculated. The latter variable was combined with a question on ill health before the last pregnancy, and had two categories (1=not healthy/weak/always ill or problem prior to last pregnancy), 2=always healthy/healthy but occasionally ill or no problem prior to last pregnancy).

Couple characteristics Spousal communication as perceived by the husband was derived from a list of 5 discussion topics on reproductive health matters and emotions and feelings. (1=ever discussed any topic since marriage, 0=never discussed any topic since marriage). Husband's authority level was assessed through an index measure ranging from 0-4 based on a series of

four related questions whether husbands alone took the final decisions on large household purchase, visits to family, friends or relatives, his wife's medical check-up during delivery, and overcoming complications during pregnancy and delivery. Freedom of choice of a marriage partner as compared to an arranged marriage was measured by directly asking the question whether marriage was a love marriage (=1) or arranged marriage (=0).

Differences between spouses in educational level and in age were each measured by means of 3 categories. Couples were considered having the same educational level if their highest attained level of education did not differ more than 1 on a scale of 14 (the 14=point scale ranges from no education (=0) to a masters or higher degree (=14)). Wives were considered having a higher education compared to their husband when the difference in favour of them exceeded 1 on the 14-point scale. Higher education of husbands was similarly defined. Differences in age between husband and wife were measured as follows: one category contains women not more than one year young than their husband, having the same age or being older, the other two categories include husbands older than their wife, 2-4 years older and over second category includes husbands 5 years older or more respectively.

Household and context characteristics In the absence of income and consumption data a household wealth score is computed based on 6 indicators of household assets and quality of housing (TV, electricity, and quality of toilet, roof, wall and source of drinking water). Households were evenly distributed into three wealth classes: poor, middle and high.

Two variables were constructed for household composition. One variable reflects the small household (size 4 persons or less) with the pregnant wife as the only adult female in the household, thus excluding for example the mother-in-law or *jethani* or *deurani* (compared to the pregnant wife the younger or the older wife of her husbands brother). Another variable is whether the mother-in-law was involved in reducing the workload of the pregnant wife (yes=1; no=0).

Religious affiliation and ethnic origin were questioned at the household level. Muslims were included in the model with hindu's and other religions as reference category (christian, buddhist, kirat). The population in the flat terai regions in Nepal can be distinguished against their place of origin, that is, whether they originally are from the terai area (=1) or from the hill area (=0).

Results

Level and content of involvement in domestic chores

For most of the pregnant women their workload hardly changes during pregnancy. Majority of pregnant women reported to have worked the same as usual (57%) or more than usual (6%). One third of the pregnant women indicated that their workload was less than usual. Similarly, half of the women (49%) reported to have worked in agriculture/daily wage work up to delivery. One quarter (23%) ended this work more than 6 weeks before delivery.

Overall, with respect to sharing their work with a male member, three quarter of female respondents (75%) reported that they received help from male members during their most recent pregnancy. According to the perception of women, husbands are on top of the list of those substantially helping the pregnant women in reducing her workload (see table 1). Other family members also provide support, especially the mother-in-law and sister-in-law. As a young married couple usually moves into the house of the family of the husband, it is not surprising that her 'in-laws' rather than her own mother and sister take part in this domestic support. Asked about their share in household work during pregnancy of their wife, almost half of the husbands reported that they did more than usual compared to the times that she is not pregnant (48%). Forty four per cent reported to have carried out the same amount of work..

What specific kind of household tasks were carried out and to what extend? Table 1 shows a general low to moderate involvement of husbands in specific domestic chores during their wife's latest pregnancy. About one in ten husbands said to wash clothes or dishes most of the times, if not always. Childcare and fetching water are more likely to be carried out, although this contribution is still relative low. Providing advice on refraining from arduous work and lifting heavy loads is common among about half of the husbands.

We observe differences in the perception between spouses. Table 1 lists perceived shares in domestic chores of husbands by response of the wife and husband. Husbands consistently report higher involvement than their wife, with a difference of around 10-15%. The difference may be due to dissimilarities in the perception of the actual workload. No efforts could be made to further explain the difference.

Determinants of involvement in domestic chores

A common assumption and prerequisite for providing support in domestic chores of the husband is his availability or his ability to be present at home. At the time of the interview twenty five percent of the husbands were not present, mainly due to internal and international labour migration. For the 445 men that could be interviewed, the time available to support their wife with household work during pregnancy is limited. Half of them (51%) say that they have enough time available for support in domestic chores during pregnancy. Bivariate analysis shows that, according to expectation, husband's availability of time is positively associated with the dependent variable ($r=0,3$ $p<0,01$): when they are at home they can contribute. It must be noted however that the perception of time available is different for their pregnant wives. Two third (69%) of them mention that their husband has enough time. This difference in perception shows that the availability of time for domestic support is not only determined by the actual time available. Also it is likely influenced by other factors such as (1) intentional motives of the husband to support his wife in tasks that are used to belong to the domain of women, and (2) differences in perceptions on how much time and with what intensity domestic tasks should be performed.

Bivariate analysis shows that in addition to husbands' time availability the variable ethnic origin has one of the highest correlations with the dependent variable. Ethnic origin is defined by where families or household members originally come from, that is from terai or hill regions of Nepal. Terai communities show a negative correlation with the dependent variable ($r=-0,3$ $p<0,01$), hill communities a reverse positive relationship. Terai communities compared to hill communities are significantly correlated with poor or mid level wealth classes, lower educational levels, arranged marriages, a traditional view on health, a less equal gender view and negative social pressure on the husband related to helping his pregnant wife in domestic chores.

All variables were analysed applying ordinary least squares multivariate regressions. Table 5 contains the results of five models that were estimated. The models show the influence of each group of variables starting with husband characteristics (Model 1 and 2) and adding wife's characteristics in Model 3, couple characteristics in Model 4 and household and context characteristics in Model 5. The models control for age of husband and wife.

Model 1 shows that social pressure is significantly associated with domestic support of the husband during pregnancy of his wife, while a more equal view on gender relations positively relates to husband's domestic tasks. Education and knowledge on maternal issues positively influence husband domestic support. In Model 2 the addition of the variable time availability reduces the explained variance by the variables social pressure and gender view each by more than half; thus showing that other factors than actual time available for household tasks at least partly underlie the response to the question if the husband thinks that he has enough time to support his pregnant wife in domestic chores. If in Model 5 the time availability variable is not included, social pressure is a significant ($p<0.05$) explanatory variable (not shown). Model 2 furthermore shows that a husband without any formal education, not having sufficient knowledge on maternal issues and holding a traditional view on health negatively effect domestic support. These variables together with the variable time availability remain significant in subsequent models.

In model 3 women's health risk characteristics are added. First pregnancy, and previous ill health, whether that be complications during previous pregnancies or ill health before the last pregnancy, are both negatively associated with help in household chores by the husband. Contrary to what was expected is the reverse effect of previous ill health. Less surprisingly on the other hand is the positive association between the occurrence of prenatal problems and increased activities by the husband in household activities. Physical problems, for example, abdominal pain, weakness, or other signs, are visible and may not go unobserved by the family. While controlling for these health risk indicators we notice that husband characteristics do not much change.

Spousal characteristics including relational and socio-demographic variables are added in model 4. All relational indicators are significantly and positively associated with the dependent variable. Husband's perception of communication on maternal matters and feelings and emotions with his wife has a positive influence on his domestic behaviour. Similarly, compared to couples with an arranged marriage, spouses who choose for each other themselves are having a significantly greater chance that the husband helps in the household during pregnancy of his wife. Husband's decision making authority adds to this effect. If he is the sole decision maker in the household, compared to others in the household, for example his wife, father or mother, he is inclined to reduce his wife's workload more.

The influence of spousal difference in education is significant. Compared to both having a similar educational level, a higher educated wife is significantly associated with more help from her husband. On the other hand, a higher educated husband negatively effects his domestic supportive behaviour. If we assume that difference in education is a measure of some form of status of the women, we may conclude that a higher status of women positively influences husband's support in household chores. Contrary to expectation, women of the same age or even older than their husband have a negative effect on husband's support. Husbands that are much older (5 years and over) than their wife tend to help more. As the association has a low level of significance (1%) it may well be that the found relationship does not exist. In general, while controlling for couple characteristics, the strength and significance of the association between other variables and the dependent variable hardly change.

Household characteristics are added in the next model. With regard to the composition of the household, the small nuclear family with only the pregnant wife present in the household positively affects husband's domestic support, whereas substantial help from husband's mother is negatively associated. The latter also applies to all other female in the household (not shown). Controlling for household composition takes away the effect of obstetric problems (not shown). In case of obstetric problems others in the household (mother-in-law) may reduce husband's involvement.

With regard to the socio-economic and cultural variables, economic status and religion have no significant effect on husbands' behaviour. In terms of economic status, the rural setting of the study with a rather homogeneous population is likely to be associated with this finding. Ethnic origin of the household on the other hand is however strongly associated with husbands behaviour in domestic chores during pregnancy of his wife and weakens the explained variance by some other variables in the model. Families originating from the hills are more likely to have supporting husbands compared to families that are from terai communities.

Model 5 explains 35% of the variation in the dependent variable. Husband characteristics alone account for 18%. This increases to 21% when health risk characteristics of the women are added, and to 30% when couple characteristics are also included. Another 5% is added by household and context variables. The contribution of each group to the explanation of the variation in the dependent variable is significant at 0.01 level.

Discussion

According to WHO (2004) a pregnant woman needs to have a reduced physical work load, and no night work during the second half of pregnancy as it may cause ill health to the mother, provoke pre-term birth or infants with low birth weight. Physical workload includes, for example, ergonomically strenuous postures, prolonged standing or walking, heavy lifting, and pushing or pulling. Therefore, a pregnant woman needs complete absence from work from week 34 to 36 depending on her health status and physical workload. The underlying assumption to the present study is that support in domestic chores to pregnant wives, and thus reducing women's workload, contributes to the prevention of maternal ill health. It appears in the study that almost two third of the pregnant women has the same or a higher workload compared to non pregnant times and half of them do agricultural or daily wage work up to delivery. In the meantime, more than half of them indicate that they ever had a health problem during pregnancy (56.9%). The data suggest that a reduction in workload may be associated with lower levels of illness. However, further analysis of this is outside the scope of the present paper.

Husband's level of involvement in domestic chores during his wife's pregnancy is modest to low. It is relative common for a husband to advise his wife to refrain from heavy work and lifting, and in practice he tends to reduce her workload by fetching water. However, husbands do not participate in all household chores, especially not those that are considered part of the domain of women, e.g. washing dishes or clothes, cooking or cleaning the house. Also, child-care by husbands is uncommon.

Time availability of the husband is a strong predictor of husbands' domestic support. The perception of available time has two components. On the one hand, labor migration and daily work outside the house prescribe (non) presence in the house. These are gendered forces that limit the time that a husband can provide support. On the other hand, we find that time priority setting, influenced by the perception of social pressure, is measured through this variable. We may conclude that a husband, stating that he has enough time available for domestic tasks also, at least partly, indicates that he is motivated to assist and is feeling less oppressed to participate in domestic chores during pregnancy. Although being a strong predictor of husbands' domestic, whether a men has time available for domestic chores is not considered to have direct policy and programme handles.

A predictor that *has* direct policy and programme handles is the negative social pressure on husbands helping their pregnant wives in household chores. Survey results confirm findings from qualitative fieldwork. One fifth of the husbands (21%) indicate that they have fears of being regarded 'maugiya' (a term for hen pecked husband among terai communities) or 'joitingre' (for hen pecked husband among hill communities), and after controlling for other factors in the multivariate model negative social pressure significantly explains part of the variance in the dependent variable. The terms are used for teasing a man involved in household work. This form of social pressure can be found among terai and hill communities. It applies not only to husbands, but to all men in the household. Results form focus group discussions give examples. A man helping his wife or daughter-in-law or sister-in-law in her domestic chores would undergo humiliating remarks from family members or neighbours or both. They would make unkind remarks such as *'Wife's servant'*, or *'What type of a husband is he, he does all his wife's work'*. A mother-in-law says *'We delivered at home and now why do you have to take your wife for check up?'*. Similarly, the father-in-law may have to listen to several remarks such as: *'don't you feel ashamed to work for your daughter-in-law', 'she will take advantage of you if you do her work'*, *'his daughter-in-law sits the whole day and he has to do her work'*. When the brother-in-law contributes in such situation, people may raise question to their relationship (blame of sexual affair) and tease him, because he is working for her and some may say that *'he doesn't love his children as much as he loves his sister-in-law'*. During focus group discussions unmarried boys were saying that the parents tell the son *'We will do it for you, you don't have to do it'*; other villagers say, *'You are namard* [not a man]*; you are a woman; women cook food; why are you cooking?'*; and family members tell him *'there are so many family members, and why do you have to do the work?'*

Survey results confirm findings from key informant interviews, that is, there are men, although few, that conduct domestic tasks and reduce women's workload during pregnancy and do not feel oppressed. These ideal husbands could serve as example for others. An approach that is most likely effective for interventions in safe motherhood programmes that aim at reducing social oppression of men for the health benefit of women, is to include these 'ideal' men as examples for others.

Another important predictor that has policy and programme handles is husband's ignorance on safe motherhood. Husbands who are not aware of maternal health risks and the benefit of using antenatal medical services are less inclined to reduce their wife's workload during pregnancy. Similarly, traditional ideas with regard to health and health care, for example, the

belief that pregnancy related illnesses and complications are often caused by witchcraft, negatively influence husband's support in domestic chores. Therefore a prerequisite for husbands' involvement in domestic chores is education and acquiring sufficient knowledge on the risks and consequences of maternity and maternal medical services.

Ignorance and the view that pregnancy is being regarded a normal process may explain husband's reduced efforts in domestic chores during the first pregnancy of his wife. Focus group participants mentioned that an adolescent boy is 'spoiled' and it is difficult for him to adapt to the new responsibilities in marital life, especially while still in his mother's nest. Another explanation is that the mother-in-law or other females in the household are much more involved in the first pregnancy than in subsequent ones. Survey data show that involvement in domestic chores of the mother-in-law and first pregnancy of her daughter in law significantly correlate ($r=0.19$ $p<0.01$). Qualitative findings indicate a tendency of young couples moving out of their parental home and establish their own 'fire' as soon as they economically can afford it. This could explain why other female in the household do less participate in higher order pregnancies. However, these findings could not be further verified.

Expectedly, the quality of the spousal relationship, here represented by the level of communication between spouses as perceived by the husband on maternal matters, and his feelings and emotions and by whether a marriage partner was freely chosen, has a positive effect on husband support in domestic chores.

Furthermore, household composition is a factor that counts. If other women are living in the house the husbands tends to refrain from domestic support. During the last decade the tendency towards smaller households instigates tension on the distribution of household work and prompts a higher demand on the husband. This trend however is not yet paralleled by the level of social acceptance towards husbands supporting their pregnant wives in domestic chores.

Most important barriers for husbands, like social pressure, lack of knowledge and spousal communication are gender related. Alike women who cannot solely escape from gender inequality, men are bound: the contextual factors that shape gender relations constrain husbands' behavior. Therefore, in general it is crucial for policies and programs aiming at safer motherhood to focus on gender aspects and how these affect preventive actions. This means

that interventions should not only target at the level of the individual (wife, husband), but very much also at household (spouses) and community level. At these levels of intervention, policies and programmes, while encouraging communication in the community at large, should aim at taking away the social stigmas that men face in support to their pregnant wives and reduce the ignorance on maternal health benefits from men's support. This can be done through a myriad of interacting and intensive information and communication campaigns targeting families and especially men in the community, and following a stepwise approach in the messages conveyed.

In this respect, it should be noted that the data point to the tension that exists between maternal health benefits from practical assistance by husbands and gender equality. For example, on the one hand a more involved husband in domestic chores and his access to household money may jeopardise women's domain, increase their vulnerability and deteriorate their gender relation. On the other hand, assisting women in domestic chores can raise men's awareness and understanding of the vulnerability and needs of their pregnant wives, thus supporting gender equality. It is recommended that safe motherhood interventions carefully monitor the way they impact on gender relations.

In general, the analysis highlights the multi-dimensional concept of male involvement. Characteristics at different levels, that is, at context, household, the couple, and the individual level all affect husbands' behaviour in supporting his wife in domestic chores during her pregnancy. We have adopted an holistic approach and included most plausible varibales in the model, which explains more then a third of the variation in the dependent variable. However, other factors that are not included in the model may be of influence or could interact with the varibales in the model.

We conclude with stating that in rural Morang district of Nepal the ideal husband for support in domestic chores during pregnancy is the man who originates from the hills, choose his marriage partner himselves, lives with her in a small household without other women, is the main decision maker in the household, is much older than his wife but sees his wife more as equal partner and communicates with her about maternal issues. He has at least attained primary education but his education level is less than that of his wife. He is not typically a believer in traditional health and health care, and does not feel oppressed by others in doing

domestic tasks. Lastly, he has experienced at least one pregnancy, and has knowledge of maternal health.

Based on the findings, future research should aim at (1) exploring the mechanisms and beliefs systems underlying gender based social pressure that prevents men from actively supporting their pregnant wives, (2) carefully monitoring and evaluating gender based interventions in safe motherhood, and (3) exploring husband's involvement in preventive and responsive actions in remote hill areas, in order to fill the gap with the present study that is conducted in a low land relative accessible setting.

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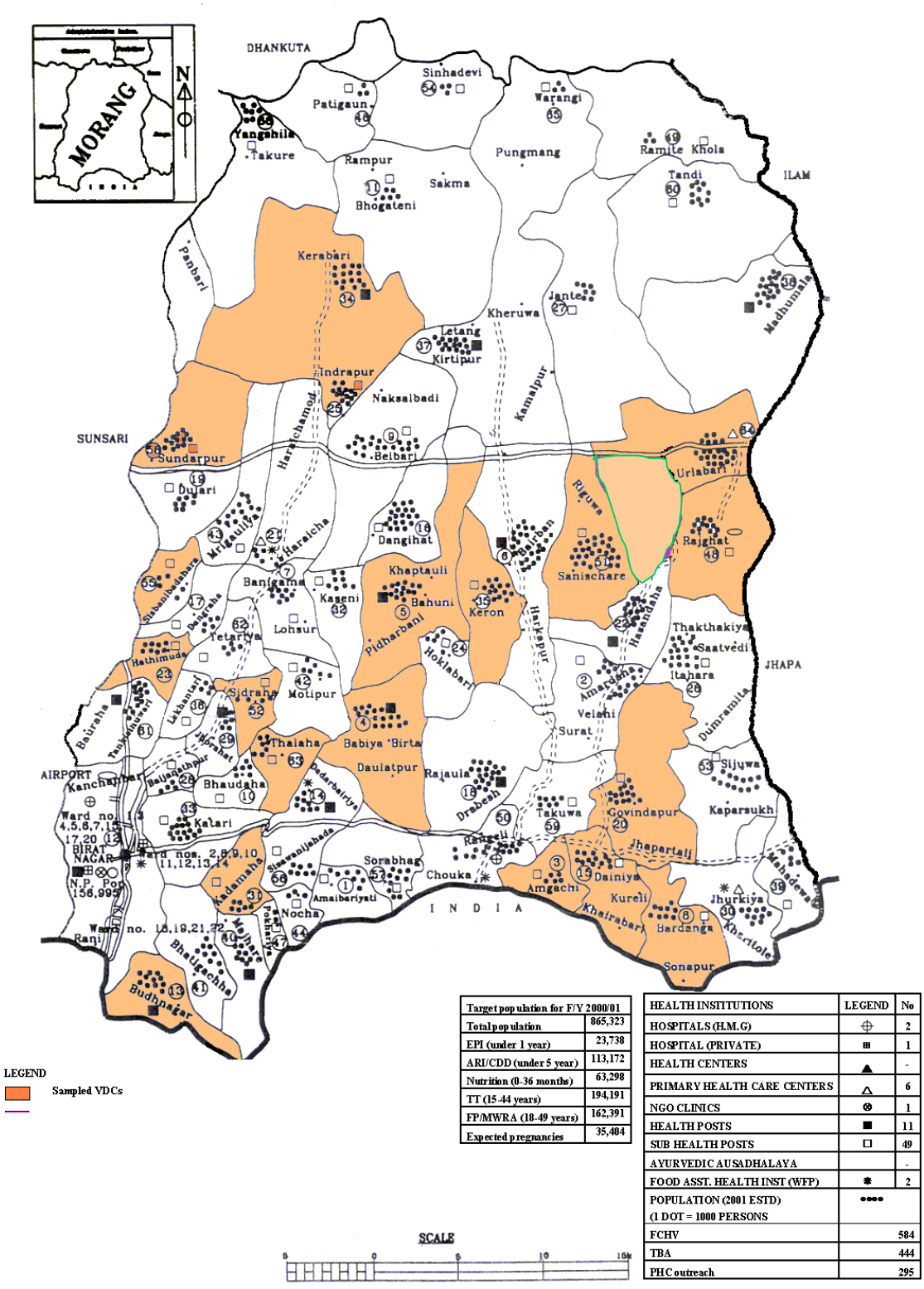
Figure 1: Map of Nepal indicating Morang District (study area)

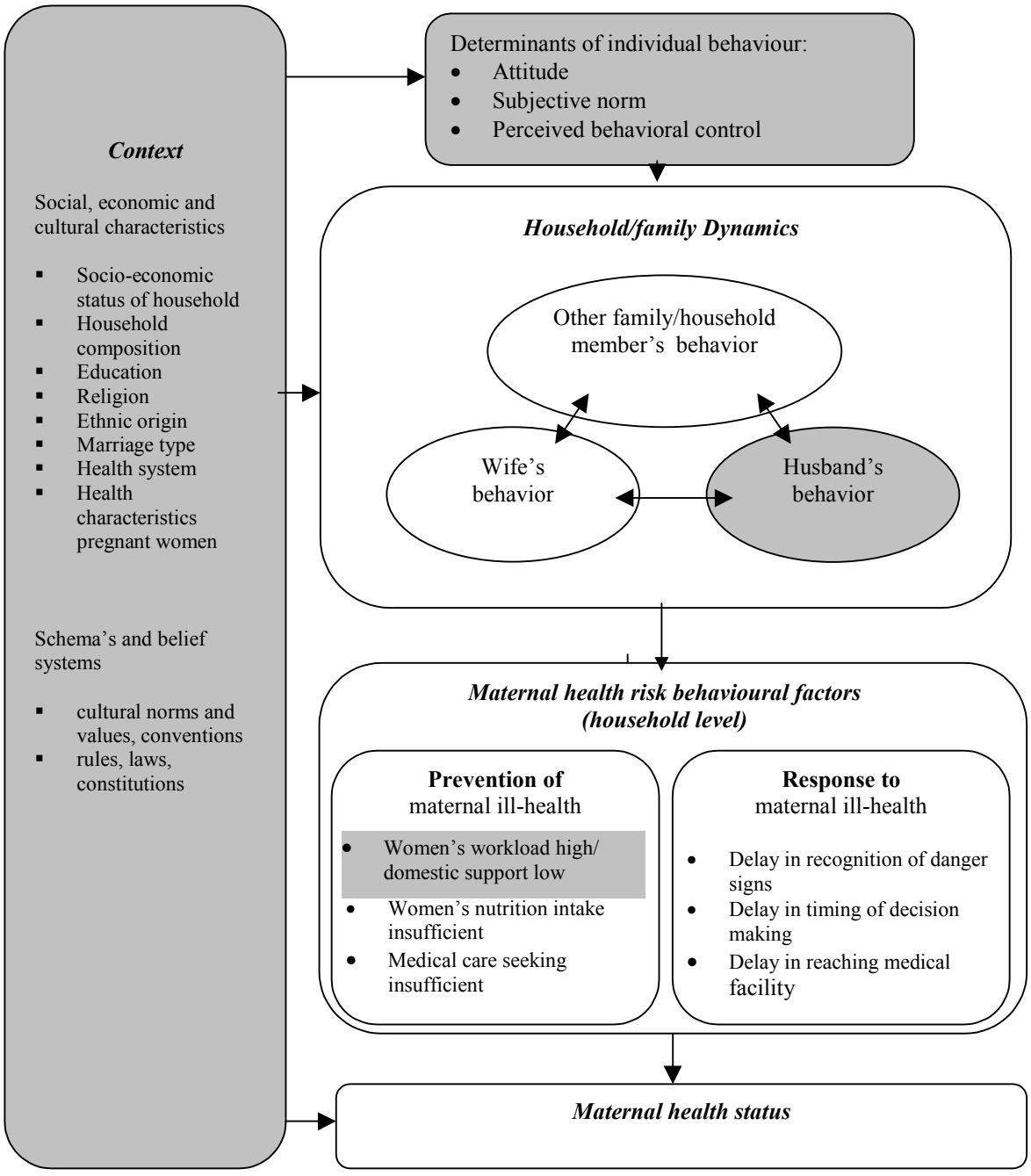
Figure 2: Map of Morang District Nepal with sampled Village District Commitees



Target population for F/Y 2000/01	
Total population	865,323
EPI (under 1 year)	23,738
ARI/CDD (under 5 year)	113,172
Nutrition (0-36 months)	63,298
TT (15-44 years)	194,191
FP/MWRA (18-49 years)	162,391
Expected pregnancies	35,404

HEALTH INSTITUTIONS	LEGEND	No
HOSPITALS (H.M.G)	⊕	2
HOSPITAL (PRIVATE)	⊞	1
HEALTH CENTERS	▲	-
PRIMARY HEALTH CARE CENTERS	△	6
NGO CLINICS	⊗	1
HEALTH POSTS	■	11
SUB HEALTH POSTS	□	49
AYURVEDIC AUSADHALAYA		-
FOOD ASST. HEALTH INST (WFP)	✱	2
POPULATION (2001 ESTD) (1 DOT = 1000 PERSONS	••••	
FCHV		584
TBA		444
PHC outreach		295

Figure 3: Simplified model on behavioural determinants of maternal health at household level; grey marked areas indicate the locus of research of the present paper



Source: based on (i) the Conceptual Framework of Safe Motherhood (Tinker and Koblinsky 1993), (ii) the Process-Context Approach (Willekens 1990 and de Bruijn 1999), (iii) the Model on Reasoned Action (Ajzen and Fishbein 1980), and (iv) the Three Delay Model (Thaddeus and Maine 1990).

Figure 4: Model of Behavioural Determinants of Husband Support in Domestic Chores to their Pregnant Wife

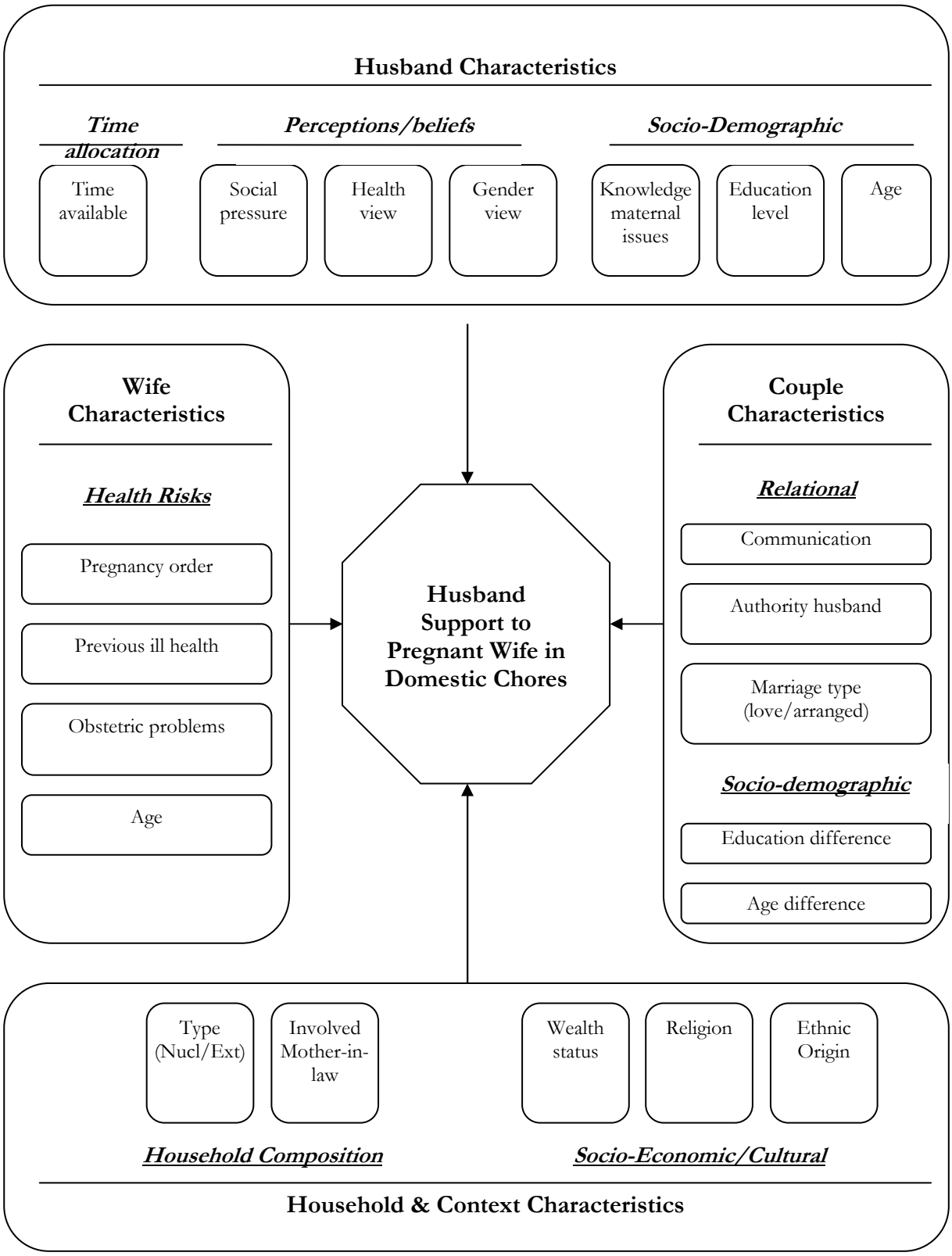


Table 1: Descriptive statistics of dependent and independent variables of husbands report (n=444)

Dependent variable		
Index of husband support in domestic chores (1-10)	*mean*	4,5
	s.d	2,2
Independent variables		
Husband characteristics		
Time availability		
Enough time available for domestic support of pregnant wife (yes=1, no=0)		51%
Social pressure		
Fear of being regarded *maugiya/joitingre* (yes=1, no=0)		21%
Index gealth view (scale 0-8)	*mean*	3,5
traditional health view (0-1)		27%
indifferent health view (2-5)		45%
modern health view (6-8)		27%
Index gender view (scale 0-3)	*mean*	0,6
gender based violence not justified (0)		63%
gender based violence justified (1-3)		38%
Index knowledge maternal matters		
can mention 2 or more danger signs or 2 or more reasons medical check-up		82%
cannot mention 2 or more danger signs or 2 or more reasons medical check-up		18%
Level of education		
no education		42%
primary		37%
secondary or higher		21%
Wife's health risk characteristics (refers to last pregnancy; reported by wife)		
first pregnancy ever		42%
higher order pregnancy		58%
previous ill health		19%
non-previous ill health		81%
obstetric problem(s) in last pregnancy		29%
no obstetric problem(s) in last pregnancy		72%
Couple characteristics		
Spousal communication		
ever discussed maternal health topic or feelings		79%
never discussed maternal health topic or feelings		21%
Index of husband's authority (scale 0-4)	*mean*	1.7
0		27%
1		21%
2		20%
3		15%
4		16%
Marriage type		
love marriage		20%
arranged marriage		80%
Education difference		
wife higher educated		8%
husband and wife same level education		49%
husband higher educated		43%
Age difference		
wife 1 year younger/same age or older		15%

husband 2-4 years older	38%
husband 5+ years older	47%

Household characteristics

Household composition	
nuclear: pregnant wife as only adult women in household, with size<=4	38%
extended: more adult women in household, size 5+	62%
mother in law involved in domestic chores	52%
mother in law not involved in domestic chores	48%
Index household wealth status	
poor	40%
middle	33%
high	27%
Religion	
muslim	9%
hindu	88%
buddhist/Christian/Kirat	3%
Ethnic Origin	
terai	62%
hill	38%

Table 2: Correlation Coefficients of Dependent and Independent Variables

Pearsons Correlation

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1 husband support domestic chores														
2 time available	0.34 **													
3 social pressure	-0.18 **	-0.22 **												
4 traditional health view	-0.19 **	-0.06	0.22 **											
5 modern health view	0.14 **	0.05	-0.14 **	-0.37 **										
6 more equal gender view	0.17 **	0.17 **	-0.22 **	-0.25 **	0.19 **									
7 sufficient knowledge	0.13 **	-0.04	-0.02	-0.22 **	0.20 **	0.16 **								
8 husband no education	-0.19 **	-0.13 **	0.18 **	0.37 **	-0.34 **	-0.26 **	-0.21 **							
9 husband sec educ or higher	0.11 *	0.13 **	-0.17 **	-0.27 **	0.42 **	0.20 **	0.27 **	-0.44 **						
10 age husband	0.09	-0.01	-0.08	-0.08	0.07	0.01	0.14 **	0.07	0.10 *					
11 first pregnancy	-0.07	0.10 *	-0.02	-0.18 **	0.10 *	0.04	0.03	-0.18 **	0.14 **	-0.26 **				
12 previous ill health women	-0.10 *	-0.08	0.08	0.09	-0.04	-0.12 **	-0.08	0.04	-0.08	0.07	-0.32 **			
13 obstetric problems	0.11 *	0.02	-0.02	-0.02	0.04	0.04	0.05	-0.07	0.05	-0.03	0.04	-0.19 **		
14 age wife	0.06	0.00	-0.13 **	-0.07	0.04	0.02	0.09	0.02	0.10 *	0.46 **	-0.38 **	0.14 **	-0.05	
15 spousal communication	0.18 **	0.06	-0.05	-0.12 *	0.09	0.08	0.18 **	-0.12 *	0.03	0.10 *	-0.08	0.01	-0.01	0.12 *
16 husband authority in hh (0-4scale)	0.16 **	0.10 *	-0.07	0.12 *	-0.09	-0.05	-0.10 *	0.04	0.00	0.13 **	-0.13 **	0.02	0.03	0.11 *
17 love marriage	0.21 **	0.05	-0.04	-0.10 *	0.08	0.12 *	-0.02	-0.13 **	-0.02	-0.09 *	0.00	-0.07	0.01	-0.10 *
18 wife higher educational level	0.11 *	-0.02	-0.01	0.09	-0.13 **	-0.05	-0.12 *	0.19 **	-0.15 **	-0.04	0.04	-0.02	-0.01	0.03
19 husband higher educational level	-0.06	0.04	-0.07	-0.10 *	0.01	0.10 *	0.11 *	-0.34 **	0.14 **	-0.02	0.01	0.01	-0.03	-0.06
20 wife 1 yr younger/same age or older	-0.07	-0.02	-0.01	0.04	-0.03	-0.06	-0.02	-0.07	-0.01	-0.28 **	0.01	0.07	-0.01	0.10 *
21 husband is 2-4 years older	-0.06	0.08	0.04	0.07	-0.01	0.07	-0.11 *	0.03	-0.06	-0.36 **	0.04	0.01	0.00	-0.03
22 one women in hh, hhsize <=4	0.16 **	-0.05	0.05	0.00	-0.09	-0.05	-0.03	0.13 **	-0.07	0.02	-0.08	0.03	0.05	0.03
23 mother in law involved	-0.21 **	-0.08	0.03	-0.05	0.05	0.09	0.05	-0.15 **	0.14 **	-0.14 **	0.19 **	-0.06	-0.05	-0.10 *
24 poorest	-0.12 *	-0.16 **	0.16 **	0.21 **	-0.30 **	-0.27 **	-0.15 **	0.41 **	-0.34 **	0.02	-0.08	0.04	-0.04	-0.02
25 middle	0.13 **	0.11 *	-0.13 **	-0.24 **	0.36 **	0.19 **	0.19 **	-0.42 **	0.41 **	0.07	0.09	-0.04	0.05	0.07
26 muslim	-0.11 *	-0.12 *	0.18 **	0.19 **	-0.15 **	-0.16 **	0.02	0.19 **	-0.10 *	0.04	-0.06	0.12 *	0.09	-0.08
27 hindu	0.02	0.07	-0.16 **	-0.18 **	0.12 **	0.13 **	-0.02	-0.15 **	0.08	-0.04	0.06	-0.08	-0.12 *	0.07
28 terai communities	-0.31 **	-0.17 **	0.21 **	0.36 **	-0.51 **	-0.24 **	-0.14 **	0.48 **	-0.34 **	-0.08	-0.17 **	0.11 *	-0.11 *	-0.09

	15	16	17	18	19	20	21	22	23	24	25	26	27
16 husband authority in hh (0-4scale)	-0.01												
17 love marriage	0.03	0.06											
18 wife higher educational level	-0.01	0.01	0.11 *										
19 husband higher educational level	0.12 **	0.01	0.01	-0.26 **									
20 wife 1 yr younger/same age or older	-0.01	-0.02	0.03	0.06	-0.01								
21 husband is 2-4 years older	-0.05	-0.14 **	0.00	0.01	-0.11 *	-0.20 **							
22 one women in hh, hhsize <=4	0.10 *	0.24 **	0.06	0.06	0.00	-0.03	-0.06						
23 mother in law involved	-0.01	-0.23 **	-0.05	-0.01	0.03	0.02	0.03	-0.25 **					
24 poorest	-0.02	0.10 *	-0.10 *	0.10 *	-0.07	0.06	-0.07	0.20 **	-0.04				
25 middle	0.09	-0.08	0.08	-0.12 **	-0.02	-0.06	0.01	-0.16 **	0.14 **	-0.57 **			
26 muslim	-0.06	-0.03	-0.12 *	-0.03	-0.04	-0.04	-0.03	0.04	-0.01	0.09	-0.11 *		
27 hindu	0.02	-0.03	0.01	0.01	0.04	0.03	0.04	-0.12 **	0.05	-0.06	0.11 *	-0.85 **	
28 terai communities	-0.04	0.04	-0.23 **	-0.03	0.07	-0.01	0.08	0.11 **	-0.03	0.43 **	-0.46 **	0.24 **	-0.14 **

** Significant at the 0.01 level (2 tailed)

* Significant at the 0.05 level (2 tailed)

Table 3: Percentage distribution of the perception of husband and wife on husband's contribution to domestic chores ((almost) always) during the last pregnancy

	Wife's report	Husband's report
Wash dishes	2.7	10.8
Wash clothes	6.1	12.6
Cook	5.6	16.9
Clean the house	7.6	19.4
Look after children	21.9	28.3
Fetch water	26.6	39.4
Advised not do heavy work	43.6	57.9
N	445	444

N=366 for 'Look after children' (wife and husband report)

Figure 5: Percentage distribution of the perception of husband and wife on husband's contribution to domestic chores ((almost) always) during the last pregnancy

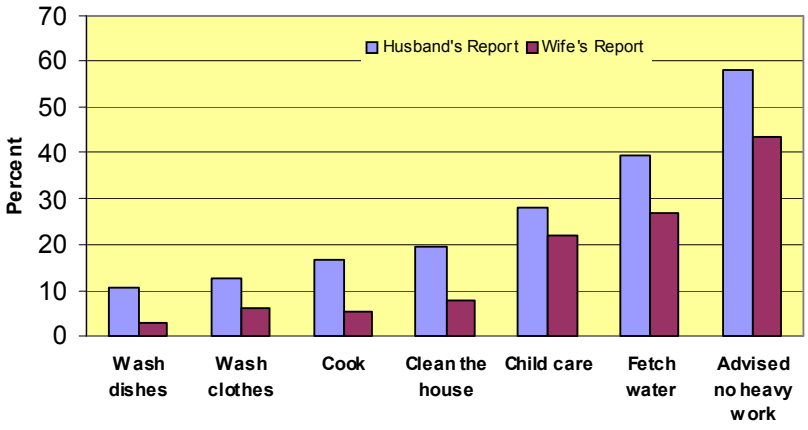


Table 5: Pearsons Correlation Coefficients of variables (husband response) that constitute the independent variable 'husband domestic support'

	Wash cloths	Wash dishes	Cook	Clean house	Fetch water
Wash dishes	0.59				
Cook	0.48	0.68			
Clean house	0.51	0.62	0.63		
Fetch water	0.43	0.43	0.48	0.59	
Adviced her not to do heavy work or lifting	0.21	0.22	0.27	0.44	0.50

* all siginificant at 1 % level

Table 6: Results of OLS regression showing the effects of husband, wife, couple and household characteristics on the likelyhood of husband's support in domestic chores during last pregnancy of the wife (†, *, ** = significant at 10%, 5% and 1% level; controlled for age of husband and wife; reference category in italics)

Independent variables		Model 1	Model 2	Model 3	Model 4	Model 5
Husband characteristics						
perceptions/beliefs:						
no perceived social pressure	social pressure	-0.6 *	-0.3	-0.3	-0.2	-0.2
intermediate health view	traditional health view	-0.4	-0.4 †	-0.6 *	-0.5 *	-0.4 †
	modern health view	0.1	0.2	0.2	0.1	-0.1
less equal gender view	more equal gender view	0.4 †	0.2	0.1	0.1	0.2
knowledge and education:						
insufficient knowledge	sufficient knowledge	0.4	0.5 *	0.5 †	0.6 *	0.6 *
primary level education husband	husband no education	-0.5 †	-0.4 †	-0.4 †	-0.6 *	-0.5 *
	husband sec educ or higher	-0.2	-0.3	-0.3	-0.1	0.0
time allocation						
no time available	time available		1.3 **	1.4 **	1.3 **	1.2 **
Wife's characteristics						
health risks:						
higher order pregnancy	first pregnancy			-0.7 **	-0.7 **	-0.6 **
healthy history women	previous ill health women			-0.4 †	-0.3	-0.3
healthy pregnancy	obstetric problems			0.4 †	0.4 †	0.2
Spousal characteristics						
relational:						
lack of spousal communication	spousal communication				0.6 **	0.6 *
	husband authority (0-4scale)				0.2 **	0.1 †
arranged marriage	love marriage				0.7 **	0.5 *
socio-demographic:						
spouses equal edu level	wife higher educational level				0.9 **	0.8 *
	husband higher educational level				-0.6 **	-0.5 *
husband 5+ years older	wife 1 yr younger/same age or older				-0.7 †	-0.8 †
	husband is 2-4 years older				-0.3	-0.3
Household characterteristics						
composition:						
more women in hh, hhsize>4	one women in hh, hhsize <=4					0.5 *
mother-in-law not involved	mother in law involved					-0.6 **
socio-economic/cultural:						
wealth status high	poorest					0.2
	middle					0.0
other religion (e.g Buddhist)	muslim					-0.3
	hindu					-0.4
hill communities	terai communities					-0.7 **
Constant		3.7 **	3.0 **	4.4 **	4.4 **	6.0 **
R Square(Nagelkerke's % explained variance)		8.8 **	17.5 **	20.6 **	29.9 **	34.8 **
N		444	444	444	444	444