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“Do Changes in Spousal Employment Status Lead to Domestic Violence? Insights from a Prospective Study in Bangalore, India”

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Abstract

The prevalence of physical domestic violence – violence against women perpetrated by husbands – is staggeringly high across the Indian subcontinent. Although gender-based power dynamics are thought to underlie women's vulnerability, relatively little is known about risk and protective factors. This prospective study in southern India examined the association between key economic aspects of gender-based power, namely spousal employment status, and physical domestic violence. In 2005-2006, 744 married women, aged 16-25, residing in low-income communities in Bangalore, India were enrolled in the study. Data were collected at enrolment, 12 and 24 months. Multivariable logistic regression models were used to examine the prospective association between women's employment status, their perceptions of their husband's employment stability, and domestic violence. Women who were unemployed at one visit and began employment by the next visit had an 80% higher odds of violence, as compared to women who maintained their unemployed status. Similarly, women whose husbands had stable employment at one visit and newly had difficulty with employment had 1.7 times the odds of violence, as compared to women whose husbands maintained their stable employment. To our knowledge, this study is the first from a developing country to confirm that changes in spousal employment status are associated with subsequent changes in violence risk. It points to the complex challenges of violence prevention, including the need for

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interventions among men and gender transformative approaches to promote gender-equitable attitudes, practices and norms among men and women.

Keywords

India; gender; domestic violence; longitudinal analysis; economic empowerment; intimate partner violence (IPV); employment status

Introduction

The prevalence of physical domestic violence – violence against women perpetrated by husbands – is staggeringly high across the Indian subcontinent. In a recent national survey, 35% of Indian women of reproductive age reported having experienced physical domestic violence at some point in their married lives (NFHS, 2007). Moreover, considerable evidence suggests that domestic violence is also associated with an array of adverse women's health outcomes, such as pregnancy loss, psychosocial conditions, unplanned pregnancies and sexually transmitted infections (STIs), including HIV/AIDS (Dunkle, Jewkes, Brown, Gray, McIntyre, & Harlow, 2004; Jejeebhoy, 1998; Patel, Kirkwood, & Pednekar, 2006; Sidibe, Campbell, & Becker, 2005; Sliverman, Decker, Saggurti, Balaiah, & Raj, 2008; Stephenson, Koenig, & Ahmed, 2006; Vizcarra, 2004). Yet relatively little is known about risk and protective factors. Although gender-based power dynamics in marital relationships are thought to underlie women's vulnerability to domestic violence, few studies have focused on identifying the specific aspects of these inequities that may either pose a risk for or protect against domestic violence and that are amenable to change through programs and policies (Panda & Agarwal, 2005; Rocca, Rathod, Falle, Pande, & Krishnan, 2008). In this article, we examine the association between key economic aspects of gender-based power, namely the employment status of women and their husbands, and reported experience of physical domestic violence in a cohort of married women in urban south India. To our knowledge, this is the first study to prospectively examine these relationships in a developing country context.

While some attention has been devoted to the study of women's employment as a means of empowerment, relatively little attention has been paid to the potential for backlash as a consequence of changes in women's roles. On the one hand, women's increased access to economic resources has been associated with a number of positive outcomes such as increased utilization of health care services, reduced fertility and improved children's education and nutrition (Vyas & Watts, 2008). Further, it has been hypothesized that employment may reduce women's dependence on their husbands and enhance their power within households and relationships, and thus reduce their vulnerability to domestic violence (Vyas & Watts, 2008). On the other hand, employed women may be at higher risk of experiencing violence because they may be more likely to challenge their husbands' authority or because their husbands perceive a threat to their authority (Kimmel, 1996; Koenig, Ahmed, Hossain, & Mozumder, 2003; Rocca et al., 2008; Schuler, Hashemi, Riley, & Akhter, 1996; Vyas & Watts, 2008).

The empirical evidence, both in India and elsewhere, is mixed. Research in rural and urban settings in India have found that women's participation in employment or related activities – both before and after marriage – is associated with greater reporting of domestic violence (Kishor & Johnson, 2004; Krishnan, 2005; Rocca et al., 2008; Verma & Collumbien, 2003). In cross-sectional analyses of baseline data from our study in urban Bangalore, women who participated in vocational training after marriage were more likely to experience violence (adjusted OR=3.1, 95% CI: 1.7-5.8)(Rocca et al., 2008). In contrast, research in the southern state of Kerala found that women with regular employment were less likely to report ever

having experienced physical domestic violence than unemployed women (Panda & Agarwal, 2005).

Power dynamics within marital relationships and the risk of domestic violence are likely to be shaped not only by women's employment but also by their husbands' employment status (Benson, Fox, DeMaris, & Van Wyk, 2003; Fox, Benson, DeMaris, & Van Wyk, 2002; Macmillan & Gartner, 1999). In India, a husband's ability to provide economically for the family is intimately linked to notions of masculinity as well as personal and family honor. A study of married men and women in a working class community in suburban Mumbai found that men's failure to provide economically for the family did not go unnoticed and often led to criticism by neighbors (George, 2006). Research has also highlighted the challenges that men in urban poor communities face in meeting their role as economic providers, including difficulties in securing steady employment and alcohol dependency, which can lead to frustration, stress, marital discord and domestic violence (George, 2006; Krishnan, Iyengar, Pande, Subbiah, Roca, Anuradha R et al., 2005; Sivaram, Latkin, Solomon, & Celentano, 2006). In a cross-sectional survey of urban and rural women in Kerala, women whose husbands were employed were significantly less likely to report physical domestic violence when compared to women with unemployed husbands in adjusted analyses (OR=0.2, 95% CI: 0.1-0.3 for both regular and irregular employment)(Panda & Agarwal, 2005).

Inconsistencies in women's and husbands' employment status have also been hypothesized to affect domestic violence risk (Benson et al., 2003; Fox et al., 2002; Macmillan & Gartner, 1999). In multivariable analyses of cross-sectional data from seven rural and urban sites across India, the odds of reported violence were two times greater among employed women whose husbands were unemployed in comparison to unemployed women whose husbands worked (OR=2.2, 95% CI: 1.3-3.4); a slightly elevated odds of violence (OR = 1.2, 95% CI: 1.0-1.4) was also observed when both women and their husbands were employed (Jeyaseelan, Kumar, Neelakantan, Peedicayil, Pillai, & Duvvury, 2007). Similar findings have been reported in a survey of urban and rural communities in Kerala (Panda & Agarwal, 2005).

Taken together, research to date suggests that the employment status of both women and their husbands are associated with women's risk of domestic violence. However, existing research is entirely based on cross-sectional surveys, which cannot establish a temporal relationship. Thus, it is unclear whether, for example, experiencing domestic violence leads women to seek out employment or whether women's employment leads to marital discord and violence. Our research improves upon existing studies of domestic violence by *prospectively* examining the relationships between spousal employment status and domestic violence in the context of a 24-month longitudinal study (the Samata Health Study) of the association between gender-based power and susceptibility to HIV and other sexually transmitted infections among young, married women in the southern Indian metropolis, Bangalore.

Theoretical Approach and Hypotheses

Our analysis draws upon Kabeer's model of women's empowerment and other theoretical frameworks that have guided domestic violence research, specifically, theories of family stress and resources and the concept of hegemonic masculinity (Connell, 1987; Connell & Messerschmidt, 2005; Dutton, 1988; Goode, 1971; Greenfield, Rand, Craven, Klaus, Perkins, Warchol et al., 1998; Hornung, McCullough, & Sugimoto, 1981; Kabeer, 1999). These theoretical approaches frame the relationship between spousal employment status and domestic violence in different ways and shaped the hypotheses that we examined in this study.

In Kabeer's model of women's empowerment, a key component of women's power is their access to and control over economic, political, and social resources, including employment (Kabeer, 1997). The model emphasizes the fact that the meaning and implications of specific

kinds of resources are shaped by local circumstances and prevailing values. When women's access to and control over resources go against prevailing norms and values, as may be the case with women's employment in the Indian setting, there may be substantial social costs, including heightened domestic violence.

In contrast, family stress theory emphasizes the material or structural dimensions of employment and suggests that domestic violence results from the stress associated with unemployment and lack of economic resources (Dutton, 1988; Greenfield et al., 1998). On the other hand, resource theory and the concept of hegemonic masculinity – a pattern of roles, expectations and practices (including violence) that facilitate male dominance over women – emphasize the symbolic significance of spousal employment status. These theories posit that increases in women's economic resources and/or reductions in men's relative contributions to household economic resources can challenge masculine identities and provoke violence (Connell, 1987; Connell & Messerschmidt, 2005; Goode, 1971; Hornung et al., 1981).

Guided by these theoretical frameworks, we hypothesized that women's employment would increase their risk of domestic violence. In addition, we hypothesized that husband's employment stability and household economic status would also be associated with women's risk of violence.

Methods

Study design and participants

Between August 2005 and February 2006, we enrolled 744 young married women from two urban low-income communities in Bangalore in the Samata Health Study (see (Rocca et al., 2008) for details). This sample size was determined based upon the primary aim of the study: investigating predictors of women's susceptibility to HIV and other sexually transmitted infections. Eligible women were married, between 16 and 25 years of age, fluent in one of the local languages (Tamil or Kannada) and planning residence in the community for the duration of the 24-month study. Participants were recruited by female field staff at two government primary health centers and surrounding communities through outreach activities and door-to-door visits (Rocca et al., 2008). Recruitment was conducted until the target sample size was reached. Interested women were invited to the health center to complete the informed consent process and participate in baseline procedures. Two follow-up interviews were conducted 12 months and 24 months after the baseline visit. The study protocol was reviewed and approved by human subjects' protection committees of the University of California, San Francisco, the Centre for Public Policy at the Indian Institute of Management, Bangalore, and RTI International.

At baseline, women participated in face-to-face interviews conducted by female interviewers who had similar demographic profiles to participants. Data were collected on participants' sociodemographic background; household and relationship characteristics; individual and spousal employment status; sources of social support; and experiences of physical domestic violence. In follow-up interviews, we gathered information on dynamic aspects of gender-based power, including employment status of women and their husbands and experience of domestic violence.

Given the sensitive topics addressed in the study, particular attention was paid to minimizing participation-related risks and reporting bias (Rocca et al., 2008). Study staff received in-depth training on interviewing techniques, gender and reproductive health and the study protocol, which included detailed guidelines on ethics and safety issues in participant recruitment, enrollment and follow-up based on the World Health Organization's guidance on domestic violence research (WHO, 2001). Staff also participated in refresher training sessions during

the course of the study, and study coordinators monitored their performance on a regular basis. Community rapport was promoted through informational meetings and formative research. In order to promote participants' comfort and to protect their confidentiality and privacy, all data collection took place within private rooms at the health centers, which are widely used by young women for family planning, antenatal, postnatal and immunization services. Rapport with participants was enhanced by the presence of study physicians and counselors who offered free reproductive health services based on the "Well Woman Clinic" model (Baksi, Harper, & Raj, 1998). In addition, at all visits, staff shared information on domestic violence counseling services and referrals with participants, regardless of disclosure of violence.

Several strategies were used to minimize loss to follow-up. At enrollment, staff obtained permission to contact participants by making in-person visit reminders and leaving messages with friends or family if necessary. Relevant contact information was collected and updated at each visit. Finally, a small token of appreciation was offered at the completion of each study visit.

Measures

The data collection instruments were developed based on Kabeer's framework, the relevant literature, and formative qualitative research (Rocca et al., 2008). The two primary exposures we examined were (1) wife's employment status and (2) husband's employment stability. Women's employment status was defined as working for money outside of the home in the past six months (yes/no). Husband's employment stability was measured by asking whether a participant's husband had difficulty finding or keeping a job in the previous six months (yes/no). We chose this measure because our formative research suggested that husbands' employment stability, rather than employment status (97% of husbands were employed), best captured whether a man was meeting his socially expected role. We also examined husbands' employment type (year round, steady versus contract/wage or seasonal labor) to determine if results varied when using an alternative measure of employment stability.

Experience of domestic violence, the outcome of interest, was based on self-report of having been "hit, kicked or beaten" by one's husband (yes/no) for any reason in the six months prior to the follow-up visit.

For multivariable analyses, we also considered other independent covariables that we hypothesized could confound the relationship between domestic violence and the primary exposures of interest, based upon the literature and insights gleaned from analyses of baseline data (Rocca et al., 2008). Prior to the initiation of analyses, we outlined our hypotheses about the causal relationships between all variables in a Directed Acyclic Graph (DAG; not presented). We then used the DAG to determine the minimum variables necessary to include in multivariable analyses to remove confounding of the main effects, using standardized procedures (Greenland, Pearl, & Robins, 1999; Hernan, Hernandez-Diaz, Werler, & Mitchell, 2002).

Covariables we considered included household socioeconomic status, which was measured at baseline through a continuous asset index derived from factor analysis of data on household assets and facilities (Vyas & Kumaranayake, 2006). We also considered whether the woman had worked prior to marriage (yes/no) and a time-varying duration of marriage variable (years). Because our baseline data indicated that women who considered themselves to be in a "love" marriage (marriage by choice) were more likely to have experienced violence before study entry than women in a marriage arranged at least in part by their families (adjusted OR=1.7; 95% CI: 1.1-2.5), we included "love" marriage as a covariable and assessed it dichotomously ("love"/arranged)(Rocca et al., 2008). A variable describing whether the woman had received

a post-marriage request for additional dowry in the past six months (yes/no) was also considered for similar reasons (OR=2.3; 95% CI: 1.5-3.4).

To prospectively examine the degree to which wife's employment and husband's employment stability were associated with subsequent domestic violence, we created variables, separately for each exposure, representing both the so-called "cross-sectional" and longitudinal effects (Fitzmaurice, Davidian, Verbeke, & Molenberghs, 2008). The cross-sectional effect was exposure status at the visit prior to which violence was assessed. The longitudinal effect consisted of three dummy variables representing changes in exposure status from the prior visit to the current visit. For example, in the case of women's employment status, the dummy variables were (a) woman changes from employed to unemployed (yes/no) and (b) woman changes from unemployed to employed (yes/no); the category of unchanged employment status served as the reference category for (a) and (b). Equivalent variables were constructed for husband's employment stability. Each participant contributed up to two observations to the analysis: one observation assessing change in exposure status from baseline to 12-months, and the second assessing change from 12-months to 24-months.

In addition to data on economic indicators of gender-based power, we collected information at baseline on women's motivations for seeking (or not seeking) employment as well as perceived benefits and repercussions of employment. We also asked women whose husbands experienced unstable employment to provide reasons why their husbands had difficulty finding or keeping a job using an open-ended question. Women's responses to these questions were explored in order to better understand the processes underlying the hypothesized relationships.

Analysis

All data were double entered, and range and consistency checks were built into the data entry screens. Only participants who completed both a baseline and 12-month visit (n=653), and those completing both 12 and 24-month visits (n=536), were included in analyses so that we could examine longitudinal effects. We first examined the cross-sectional relationships between independent variables and ever having experienced physical domestic violence at baseline using contingency tables, chi-square analyses, and Student's t-tests.

To examine the independent relationships between each exposure variable and domestic violence, we fit separate logistic regression models for each economic indicator and variable considered to be a confounder based on our DAG: duration of marriage, "love" marriage, and asset score. We used a generalized estimating equation approach, assuming an exchangeable working correlation matrix and reporting robust standard errors, to account for the clustering of observations within participants over time.

The unadjusted models for each main exposure included both the cross-sectional variable representing exposure at the previous visit, as well as the longitudinal dummy variables to capture the effect that a change in exposure over time had on odds of experiencing domestic violence. To test for statistical interaction between women's employment and husband's employment stability, we estimated a model including these main effects and an interaction term between the two longitudinal effects. However, because we found no interaction, we did not include the interaction term in the final multivariable model.

Finally, we ran a multivariable logistic regression model to examine the association of each main exposure variable and domestic violence, adjusting for duration of marriage, "love" marriage, and asset score. In order to assess whether risks for continued violence differ from those for initial episode of violence, we repeated all analyses separately for women who had and had not ever experienced violence, keeping in mind that we had limited power to detect such differences. We also repeated analyses using the alternative husbands' employment

stability measure, employment type, to see if results differed. All analyses were conducted using Stata 10.1 (College Station, TX).

For explanatory purposes, women's baseline responses to questions on motivations for working (or not working), benefits and repercussions of working, and reasons for their husbands' employment difficulties were simply tabulated. We examined whether women who worked for each reason were more likely to have experienced violence using chi-square analyses.

Results

Seven hundred and forty four women (44% of 1707 eligible women) enrolled in the prospective study and completed baseline study procedures. While 15% (265/1707) of women declined to participate outright, similar proportions of non-enrollees communicated their unwillingness or inability to participate through non-verbal cues (244/1707) or by repeated postponement of the informed consent process (260/1707). An additional 179 women (10%) consented to participate in the study but did not return for the baseline visit.

Of the 744 women who consented and completed baseline study procedures, 88% (n=653) and 73% (n=544) completed the first and second follow up interviews, respectively. Nearly two thirds of those who were lost to follow up (LTFU) had moved out of the study area. The other main stated reason for discontinuing study participation was loss of interest in participation. Participants who completed follow-up visits generally had a similar sociodemographic profile to those who were LTFU with the exception of parity and marital duration. Women completing the 12-month visit were higher parity and had been married for longer than those LTFU; however, this difference disappeared at the final 24-month visit.

Demographic characteristics and potential risk and protective factors for domestic violence for participants included in longitudinal analyses are shown in table 1. The average age of study participants and their husbands was 22 and 28 years, respectively. At baseline, 57% of participants reported ever having experienced physical domestic violence. These women were married on average a year longer ($p<0.001$) and were more likely to have children ($p=0.001$) compared to women who had never experienced violence. Further, a larger proportion of women reporting violence had a "love" marriage ($p<0.001$) and were employed before marriage ($p=0.03$). One-fifth of women were employed at study entry; most worked as domestic workers (61%) or construction laborers (11%).

Participants' husbands, the majority of whom were employed (97%), were engaged in an array of unskilled or semi-skilled occupations, with over half (58%) in construction-related jobs including manual labor, masonry, painting, and tile-laying. Substantial proportions of women reported that their husbands had difficulties either finding or keeping a job (60%). Only 27% of working men had steady, year-round employment; 73% were either contract/wage or seasonal workers. The most common reasons women gave for their husbands' employment instability at baseline were that his health prevents him from working (30%) and that there are few jobs available (26%). Over two thirds of women who had ever experienced domestic violence reported that their husbands had difficulty finding or keeping a job, as compared to about half of those who had not experienced violence ($p<0.001$).

Among women who reported no history of violence at baseline (n=280), 19% experienced violence for the first time at some point during the 24-month follow-up. In contrast, over half (57%) of women who reported prior experiences of violence continued to do so during the follow-up period.

Table 2 summarizes the results of the longitudinal analyses. As hypothesized, both the cross-sectional and longitudinal effects of women's employment status were associated with an

increased risk of domestic violence in both unadjusted and multivariable models. Women who were employed at one study visit had a 60% higher odds of violence by her subsequent visit (adjusted OR=1.6, 95% CI: 1.1-2.3), as compared to unemployed women, controlling for other potential factors associated with violence. Furthermore, women who were unemployed at one visit and newly began employment by the next visit had an 80% higher odds of violence (adjusted OR=1.8, 95% CI: 1.3-2.5), as compared to women who maintained the same employment status over time. Women who previously worked and stopped working experienced only a slight decrease in violence.

Our second exposure of interest, husband's difficulty finding or keeping a job, was also associated with domestic violence in both unadjusted and multivariable models. Women whose husbands had difficulty finding or keeping a job at one visit were more than twice as likely to experience violence (adjusted OR=2.3, 95% CI: 1.6-3.3) by the next interview. Furthermore, women whose husbands had stable employment at the previous visit and newly had difficulty with employment had 70% higher odds of violence (adjusted OR=1.7, 95% CI: 1.1-2.6) than women whose husbands maintained the same employment status from the previous visit. Women whose husbands had previously had difficulty but later had no difficulty were at reduced odds of violence (adjusted OR=0.6, 95% CI: 0.4-0.8). Finally, as in our baseline cross-sectional analyses, women in "love" marriages were almost twice as likely to report experiencing violence during follow up (adjusted OR=1.9, 95% CI: 1.4-2.6), and those with higher household assets were less likely to report violence (Rocca et al., 2008). Results were virtually identical when we repeated analyses using the alternative measure for husband's employment stability.

When we repeated analyses separately for women who had and had not previously experienced violence, the majority of results were not substantially changed (data not shown). There was a suggestion that a husband newly encountering employment difficulties may be more important as a trigger for initial violence, while ceasing to face such difficulties may reduce violence risk only among women with a history of violence. Because the confidence intervals for these stratified analyses overlapped, results are suggestive but not conclusive.

In descriptive analyses, we explored the motivations underlying women's decisions to seek employment. Among women not working at baseline, 49% reported that pregnancy or needing to take care of children prevented them from seeking employment; 47% noted that it was because their husband did not want them to work. By far the most common motivation that women gave for working was financial need (86%). An additional 11% of women worked either because they wanted to spend their time usefully or because they wanted to. Working women who did so because they needed the money were more likely to report violence than working women who did not report these reasons ($p=0.01$). In contrast, working women who worked because they wanted to spend their time usefully or because they wanted to were no more likely to report recent violence. While many working women perceived that they were more respected by their husband and his family (59%) and were able to make friends (47%) because they were employed, a majority (54%) also felt that they were unable to manage household work such as cooking and caring for children. These perceived benefits and repercussions of employment were not associated with reported violence.

Discussion

This prospective study provides strong evidence that women's employment in a context of poverty and gender inequities may have potent consequences for women and their risk of physical domestic violence – at least in the short term. Equally important in influencing domestic violence risk is husbands' employment stability, with risk in this study increasing when husbands faced difficulties in finding or keeping a job and decreasing when husbands

no longer faced such challenges. While similar associations have been documented in qualitative studies and cross-sectional surveys in India, ours is the first to confirm that changes in spousal employment status are associated with subsequent changes in violence risk. Notably, although our study had limited statistical power to detect differences in factors associated with initial versus repeat experiences of violence, our analyses suggested that a husband newly encountering employment difficulties may increase women's risk of experiencing violence for the first time.

Overall, women were ambivalent about employment. On the one hand, they perceived multiple benefits to being employed, including income as well as enhanced self esteem and social support. Importantly, nearly half (47%) of participants noted that they were not employed because their husband did not want them to work, suggesting that they may have considered it otherwise. Similar benefits of employment have been reported by young, married low income women in previous qualitative studies as well (Krishnan et al., 2005; Swaminathan, 2004). For instance, in our formative qualitative research (not examined here), respondents acknowledged that contributing financially to the household could give women more control over their lives and greater equality with their husbands in certain realms, such as decisions regarding children (Krishnan et al., 2005). Qualitative research with rural and urban women workers in the southern state of Tamil Nadu yielded similar findings (Swaminathan, 2004). Participants highlighted how their incomes enabled them to buy more varied, higher quality food, educate their children, and repay loans; enhanced their self-esteem; and, in some cases, generated respect from those close to them.

On the other hand, women simultaneously viewed work as a burden, often necessary because husbands did not provide adequately for the family. Over half the women in this study felt that they were unable to manage the pressures of employment and household work. In the qualitative study in Tamil Nadu, rural and urban women workers underscored that, along with the responsibility of income generation, they had to bear the burden of household chores (Krishnan et al., 2005; Swaminathan, 2004). Women's days often spanned 16-18 hours, and young mothers were particularly stressed since "if they failed to cook the evening dinner within a reasonable time, they [had] to put up with their children going to sleep on an empty stomach (Swaminathan, 2004)." The fact that the predominant types of employment available to working class women are low-paying and physically strenuous and offer few benefits and prospects for advancement only added to their sense of burden.

Taken together, these findings point to hypotheses about how women's employment may lead to violence. Rapid changes in gender roles and relations can lead to backlash, including violence against women. For example, qualitative and quantitative studies in the US and Africa suggest that female-initiated methods to prevent HIV and sexually transmitted infections may be viewed as giving women "too much power" and lead men "to feel insecure or threatened" and to perpetrate violence against female partners (Mantell, Dworkin, Exner, Hoffman, Smit, & Susser, 2006). According to our qualitative research in low income communities in Bangalore and other studies in India, it is socially permissible for a husband to take a woman to task if she was perceived as failing to meet family and social expectations and not adequately performing her duties as mother and wife – for instance due to employment (Krishnan et al., 2005; Rao, 1997).

As hypothesized, husbands' employment stability was also associated with domestic violence in this study. A key social expectation of men once married is that they work and earn for their family, and failure to meet this expectation can lead to social disapproval (George, 2006; Krishnan et al., 2005). Social disapproval, a sense of inadequacy and frustration and related stressors associated with living in poverty may increase the likelihood of men perpetrating domestic violence. Further study is needed to better understand the role of husband's

employment instability as a trigger for initial violence as opposed to its impact on women's risk of experiencing repeated violence.

Teasing apart the symbolic and economic meanings of both women's and men's employment is challenging. Although we adjusted for household socioeconomic status, the extent to which the role of husbands' employment stability in shaping women's risk of domestic violence reflected the impact of gender norms and expectations on men as opposed to the impact of living in poverty remained unclear. Similarly, we were unable to discern whether the increase in violence amongst women who work is a result of their access to financial resources, per se; their challenging of expected gender roles; men's perceptions of their wife's altered economic role in the household; men's perceived or actual loss of power; or some combination. Are women who are employed more likely to challenge their husbands? Do the challenges that working women face in meeting their household care responsibilities and husbands' limited participation in these tasks lead to conflict and violence? Do husbands of working women perceive a threat to their authority and position in the household? What is the impact of gender norms and social expectations on men's self-esteem, particularly in the context of poverty? In-depth qualitative research with women and men is needed to answer these questions.

Limitations

Our findings are based on a convenience sample, and therefore may not be representative of the experience of young married women living in Bangalore's low income communities. Indeed, obtaining a high enrollment rate can be a challenge for studies that focus on sensitive topics such as gender-based power dynamics in marriage, domestic violence and women's health; longitudinal research poses an additional challenge. Gathering sociodemographic data from non-enrollees proved difficult, and as a result, our ability to assess the generalizability of these results is limited. However, it remains unknown whether women who choose to participate in studies such as ours are any more or less likely to have experienced domestic violence (Ellsberg, Heise, Pena, Agurto, & Winkvist, 2001).

Importantly, we went to considerable lengths to minimize threats to internal validity by reducing reporting bias, participation-related risks, and bias due to loss to follow up. For example, we carefully trained female interviewers, conducted interviews in the private space of a health center, and established a presence in the community prior to the launch of the study (Rocca et al., 2008). In fact, relatively small-scale focused studies like ours that employ such strategies to minimize threats to internal validity may actually yield more accurate data on violence than larger-scale surveys (Ellsberg, Heise, Pena, Agurto, & Winkvist, 2001). Once enrolled, we were able to retain a representative majority of participants for the 24-month follow-up period.

Although this study is able to establish temporality by showing that changes in spousal employment status are associated with subsequent changes in risk of domestic violence, establishing a true causal link is not possible. Studies that examine husbands' perspectives on marital power dynamics and domestic violence are also needed in order to support causal inferences.

Implications

Gender norms and expectations are not static in urban poor communities in India. In fact, women's employment is increasingly becoming a vital aspect of individual and household subsistence and survival in these settings. For example, George's qualitative study with married women and men in Mumbai revealed that gender norms are indeed changing with women increasingly taking on economic responsibilities and making household decisions (George, 2006). Women and men, she concludes, are recasting femininity and masculinity through a

new discourse that is centered around notions of “autonomous wives” and “understanding husbands” – husbands who grant their wives space for exercising autonomy (George, 2006). Thus, entrenched gender-based roles and expectations may break down over time with increasing women's work force participation and numbers of women and men who by choice or circumstance buck the norm.

However, similar findings on the relationship between the employment status of women and their husbands and domestic violence in North America strike a cautionary note (Benson et al., 2003; Brines, 1991; Fox et al., 2002; Macmillan & Gartner, 1999). Despite substantially higher female participation in the labor force in North America (e.g., US women's labor force participation was 59% in 2005 (US Bureau of Labor Statistics, 2007) compared to 14% and 28% among urban and rural Indian women, respectively, in 2002 (Mukhopadhyay & Majumdar, 2007)), cross-sectional and prospective studies have found that employment status inconsistency, husbands' employment instability, and husbands' and wives' perceptions of job strain increased the risk of domestic violence (Benson et al., 2003; Fox et al., 2002; Macmillan & Gartner, 1999). These researchers have argued that the symbolic meaning of employment rather than its role as a socioeconomic resource is of consequence when considering domestic violence risk. They have contended that such findings point to the cultural and ideological (that is, patriarchal) bases of domestic violence (Benson et al., 2003; Macmillan & Gartner, 1999). The extent to which the similarities between findings from North American research and our study in India represent commonalities in the underlying causes of domestic violence are unclear, but intriguing and warrant cross-cultural exploration.

Our study points to the complex challenge of women's empowerment. Increasing women's access to decent and desired employment – by enhancing skills, increasing occupational choices and demand for female labor and ensuring fair wages and adequate social protection – must be at the forefront of economic empowerment efforts (International Labor Organization, 2000). However, our study underscores the importance of minimizing the potential social repercussions of these efforts. As noted in the International Labor Organization's proposal to promote decent work for women, social dialogue – a process through which a multiplicity of perspectives are voiced and discussed – is a critical avenue towards greater gender equity, and may be an important tool for minimizing backlash (International Labor Organization, 2000). In addition, programs that address the impact of poverty and gender norms on men and those that explicitly focus on promoting unbiased gender-attitudes and norms are urgently needed. The results of a number of efforts that have employed gender-transformative and dialogue-based approaches to change practices and norms in contexts as varied as southern Africa, Brazil and India demonstrate that a violence-free and gender-equitable future is indeed achievable (Barker, Ricardo, & Nascimento, 2007; Peacock & Levack, 2004).

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Baseline Physical Domestic Violence Experience in a Cohort of Young Married Women, by Participants' Characteristics: The Samata Health Study, Bangalore, India

Table 1

	No Domestic Violence Ever n=280 (43%)		Domestic Violence Ever n=373 (57%)		All Participants n=653 ^d		P ^b
	mean	SD	mean	SD	mean	SD	
Age	22.3	2.4	22.5	2.2	22.4	2.3	0.28
Husband's age	27.6	3.6	27.7	3.8	27.7	3.8	0.68
Duration of marriage	3.9	2.8	4.8	2.9	4.4	2.9	<.001
	n	%	n	%	n	%	
Religion							
Hindu	156	55.7	194	52.2	350	53.7	0.22
Muslim	35	12.5	37	10.0	72	11.0	
Christian	89	31.8	141	37.9	230	35.3	
Language							
Kannada	90	32.1	108	29.0	198	30.3	0.38
Tamil	190	67.9	265	71.1	455	69.7	
Marriage type							
Arranged marriage	208	74.3	223	59.8	431	66.0	<.001
"Love" marriage	72	25.7	150	40.2	222	34.0	
Parity							
Nulliparous	57	20.4	46	12.3	103	15.8	0.001
1	94	33.6	100	26.8	194	29.7	
2	78	27.9	132	35.4	210	32.2	
3+	51	18.2	95	25.5	146	22.4	
Wife employed before marriage	177	63.2	266	71.3	443	67.8	0.03
Wife currently employed	46	16.4	86	23.1	132	20.2	0.04
Husband currently employed	271	97.1	360	96.5	631	96.8	0.66
Husband's employment type^c							
Steady employment / all-year	88	32.5	75	20.8	163	25.8	0.001
Contract/wage labor or seasonal	183	67.5	285	79.2	468	74.2	
Husband has had difficulty finding or keeping a job, last 6 months	141	50.4	252	67.6	393	60.2	<.001

^aSample includes women who participated in at least the 12-month follow-up visit.

^bP-values derived from Student t-tests and Chi-square tests.

^cType includes husbands who were currently employed.

Predictors of Physical Domestic Violence in The Samata Health Study Cohort, Logistic Regression (GEE) Models (n=653, m=1,189)^a

	Unadjusted Models ^b		Adjusted Model ^c	
	OR	95% CI	OR	95% CI
Employment Variables				
Wife employed last 6 months				
Last visit	1.80	1.28	1.56	1.08
Change: employed to no employment ^d	0.62	0.30	0.70	0.34
Change: no employment to employed ^d	1.86	1.38	1.79	1.30
Husband has difficulty finding or keeping a job, last 6 months				
Last visit	2.47	1.74	2.28	1.59
Change: difficulty to no difficulty ^e	0.60	0.44	0.58	0.42
Change: no difficulty to difficulty ^e	1.82	1.19	1.66	1.07
Confounders				
Duration of Marriage (years)	1.06	1.01	1.01	0.96
Love Marriage	1.88	1.45	1.90	1.41
Asset Score^f	0.74	0.65	0.85	0.72

^a Sample includes women who participated in at least the 12-month follow-up visit.

^b Unadjusted models assess the crude relationship between each variable and violence in separate models.

^c The adjusted model assesses the relationship between each independent variable and violence, adjusting for the other independent variables in the model. Selection of confounders based upon *a priori* hypotheses of relationships between variables and minimum number of covariables needed to remove confounding (see Measures).

^d Reference group is woman's employment did not change.

^e Reference group is husband's employment did not change.

^f Asset score is a standard normal distribution.