

Women's Access to Labor Market Opportunities, Control of Household Resources, and Domestic Violence

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Abstract

While there are many positive societal implications of increased female labor force opportunities, some theoretical model and empirical evidence suggest that working can increase a woman's risk of suffering domestic violence. Using a dataset I collected in peri-urban Dhaka, I find a positive correlation between work and domestic violence, but which is only present among women with less education or a younger age at first marriage. These results are consistent with a theoretical model in which a woman with low bargaining power can face increased risk of domestic violence upon entering the labor force as a husband seeks to counteract her increased bargaining power. By contrast, husbands of women who have higher baseline bargaining power cannot resort to domestic violence since their wives have the ability to leave violent marriages.

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1 Introduction

Access to labor market opportunities is frequently believed to improve the lives of women. For instance, promoting women's access to economic opportunities is listed in the World Bank's 2012 World Development as one of the top five policy priorities in promoting gender equality. Indeed, there are both theoretical arguments and empirical evidence that females' access to labor market opportunities decreases early marriage and childbearing (Jensen, 2012) and improves women's bargaining power within the household (Blumberg and Coleman 1989; Dharmalingam and Morgan 1996; Rahman and Rao 2004; Anderson and Eswaran 2009; Majlesi 2011). Moreover, labor force opportunities can increase health and educational investments in children of mothers who work (Luke and Munshi 2011; Atkin 2009) or whose parents enroll them in school to improve their chances of gaining better jobs in the future (Oster and Millett 2010; Heath and Mobarak 2011).

However, labor force opportunities may also present unintended negative consequences in the lives of women who gains access to new resources, information, and experiences, which may threaten a husband who prefers complete control over the household . In response, a husband may attempt to regain control over household resources through domestic violence. Theoretical household bargaining models show how a woman's access to economic opportunities can either decrease or increase violence, depending on her initial level of bargaining power (Tauchen et al. 1991; Eswaran and Malhotra 2011).

Specifically, in Eswaran and Malhotra's model, husbands inherently dislike inflicting violence, but may resort to doing so in order to influence the decision of the wife, who is assumed to make the decisions about household resource allocation. So a woman with a bad outside option will have low enough bargaining power that she will not face domestic violence, since she has to make decisions in accordance with a husband's preferences even absent the threat of domestic violence. However if labor force participation increases her bargaining power sufficiently, she does now have the ability to influence household decisions and thus may face domestic violence as her husband's response to this potential. However, if a woman's bargaining power rises even higher, the husband must ensure that her happiness in the marriage remains above her outside option. So an increase in bargaining power for a woman who already has high bargaining power will be less likely to increase (and in fact, may even decrease) domestic violence, since she has the option to leave the marriage in response to domestic violence.

This paper examines the relationship between a woman's labor force participation, variables that proxy her bargaining power before entering the labor force, and the incidence of domestic violence that she suffers. The setting is a peri-urban area of Bangladesh

where many women work in garment factories. I find a descriptive relationship between these variables that is consistent with a model, such as that of Eswaran and Malhotra, in which a woman's bargaining power before entering the labor force is an important determinant of whether she faces domestic violence upon entering the labor force. Specifically, I find a positive correlation between labor force opportunities and domestic violence that disappears amongst women who are more educated or had older age at first marriage.

These quantitative results are consistent with interviews conducted during fieldwork and other qualitative evidence from Bangladesh. Specifically, women described how receiving a salary allows them to feel more comfortable asserting a say in household decision-making but that this assertiveness can lead to conflicts, which might break down into violence. Kabeer (1997) points out that factory employment raises a woman's outside option which would allow her to flee bad conditions within a marriage. A nontrivial number of garment workers do actually leave bad situations (?), suggesting that this is a valid option. Furthermore, as would be predicted by a household bargaining model, Kabeer (1997) points out that the ability to leave improves a woman's treatment even if she does not actually leave. If less educated women – who do tend to earn less than non-educated women (Heath and Mobarak, 2011)– are less able to provide for themselves on their own, then they may not be able to translate work opportunities power into less violence.

I then look for evidence of mechanisms other than pre-work differences in women's bargaining power that may explain these results. However, I do not find evidence consistent with an assortative matching story in which higher status women (better educated or those with higher age at first marriage) attract more enlightened husbands, who do not resort to domestic violence to reassert control after a woman enters the labor force. Neither do I find evidence consistent with a model in which lower status tend to join the labor force in response to a negative economic shock, which might both frustrate her husband and incite domestic violence.

Previous literature has not focused on the heterogeneous relationship between labor force entry and domestic violence based on a woman's characteristics upon entering the labor force. This heterogeneity is important in the Bangladeshi context studied. For instance, the relationship between age at first marriage and domestic violence in the entire sample of women is driven by the much stronger relationship between age at first marriage and domestic violence among women who work; there is a small and only borderline statistically significant relationship between age at marriage and domestic violence among women who do not work. Aside from the relevance of these results to policymakers who can better target which working women are particularly likely to suffer domestic

violence, they can help explain how studies in various settings have found both positive, negative, and zero correlation between domestic violence and women's labor force participation. The results in this paper suggest that the nature of the correlation depends on the baseline level of bargaining power of women in a particular area or survey.

2 Women's Labor Force Opportunities and Domestic Violence

There is a large theoretical and empirical social science literature on women's economic activities and domestic violence. Theories of domestic violence can roughly be categorized into instrumental violence theories, in which domestic violence is a tool used by men to control household resources or the behavior of its members, and expressive violence theories, in which violence serves a direct purpose such as relieving frustration. Many expressive violence theories posit that domestic violence occurs as "backlash" when a newly economically empowered female threatens a man's identity as the most powerful member of the household. While it is difficult to specify precise models of behavior in this context—unlike in instrumental theories the violence is not serving a well-defined strategic purpose—proponents of backlash theories do emphasize that the violence a woman faces after an increase in her economic opportunities can actually increase if her status rises to high relative to her husband. That is, a husband who feels less economically empowered than his wife may resort to violence to reassert a sense of power. For instance, Macmillan and Gartner (1999) find in Canada that labor force participation decreases domestic violence when a woman's partner is employed but increases it when he is unemployed. Jewkes (2002) points out that large differences in occupational status and education levels between spouses also lead to domestic violence in various contexts, consistent with a backlash story.

Instrumental violence theories tend to begin with a model of intra-household bargaining over resources. Unlike expressive theories, the husband does not benefit from the violence itself, and in fact may be often modelled as receiving disutility from violence (Bloch and Rao 2002; Bobonis et al. 2009; Eswaran and Malhotra 2011). However, he is still willing to engage in this costly violence if it can be used to obtain resources or influence household decision-making. In Bloch and Rao (2002), for instance, a husband may use violence to try to extract transfers from his wife's parents. In Eswaran and Malhotra (2011), a wife is the decision-maker on household resource allocation; a husband imposes violence on a wife whose allocation differs from his preferred allocation.

In instrumental violence models, as with all household bargaining models, the outside option of household members is a crucial determinant of bargaining power and thus of the actions that members take in the household bargaining context. Therefore, if a woman's outside option improves, her situation within the household can improve as she is better able to leave if she is treated poorly (Aizer, 2010). However, women who face very low baseline bargaining power may not realistically be able to leave a marriage. In this case, in the model of Eswaran and Malhotra (2011), a woman whose bargaining power increases can actually face higher risk of domestic violence since absent violence, she would be better able to try to enforce her own preferences on household resource allocation.

Empirical tests of these theories have examined the effect of several distinct types of income directed toward females: conditional and unconditional cash transfers, microfinance, and labor force opportunities. Since cash transfer programs or microfinance interventions are often randomized or implemented in ways that allow program evaluation via natural experiments, they provide invaluable information on the causal impact of a money given to a woman on domestic violence and important dimensions of heterogeneity of these effects.

There that is no conclusive direction of the overall effect of cash transfer programs, which have become especially common in middle income countries, on domestic violence, but that there are important dimensions of heterogeneity. Bobonis et al. (2009) use data collected two and six years after the Oportunidades conditional cash transfer program in Mexico to show that the program decreased the incidence of domestic violence suffered by women but increased the number of violent threats they receive from their husbands, consistent with an instrumental violence model in which the husband uses violence as a tool to regain control over household income after the wife's outside option increases. These effects fade, however, by 5 to 9 years after the implementation (Bobonis and Castro, 2010). Angelucci (2008) point out an important source of heterogeneity in these average effects: Oportunidades increased domestic violence in husbands who hold traditional gender roles, suggesting that the increased income in the hands of their wife threatens their identity. Perova (2010) also finds a reduction in domestic violence from a conditional cash transfer program in Peru.

Since conditional cash transfer programs typically have health components, their effects on domestic violence could either be due to income effects or contact with health facilities required by the conditionality of the programs. Fernald and Hidrobo (2011) are able to isolate the effects of an income transfer to mothers by evaluating the effects of an unconditional cash transfer program in Ecuador. They find that the transfer decreases

domestic violence in households in which the woman has more than primary education but increases domestic violence in households where the woman has less than primary education, if she has more than her partner.

Other research which has focused on the impact of microfinance on domestic violence has typically not found statistically significant average effects, though as in the studies of cash transfers there are important heterogeneous effects among subgroups. Kim et al. (2009) found that a randomly allocated microfinance intervention in South Africa improved women's economic standing but did not decrease domestic violence; although a treatment group that received microfinance combined with gender/HIV training curriculum did suffer less domestic violence. Ferrari and Iyengar (2010) found that a microfinance program in Burundi increased women's reported empowerment but did not affect domestic violence.

Several studies have examined the relationship between domestic violence and microfinance using observational data from Bangladesh. Two studies find a negative correlation between microfinance participation and domestic violence (Bates et al. 2004; (Schuler et al., 1996); another finds an overall zero correlation (Ahmed, 2011). An interesting pattern of heterogeneity with respect to time in the program yields the zero average effect in Ahmed (2011). He argues that empowerment programs increase domestic violence in the short run as the household adjusts to the newly empowered women, but decrease domestic violence in the long run as women are able to use their newly improved economic status to demand less violence within the household. Koenig et al. (2003) also find that the effect of participation in a credit group increased the chance of her facing domestic violence in conservative villages but decreased her risk in relatively more liberal villages.

While these results contribute to an understanding of the relationship between intra-household bargaining and domestic violence, there are several reasons why a woman's labor force participation may impact domestic violence differently from money received in a cash transfer or microfinance program. First, the sample of women choose to participate in the "treatment" is different. While cash transfers typically are available to all women or mothers who are poor enough to qualify, the decision to join the labor force is affected by characteristics of the woman and community, which might interact with her status within the home.

There are also differences in the way in which receiving a transfer or a loan, compared to a paycheck, changes the household's resource endowments between the husband and wife. Work clearly takes up a woman's time, which may affect her ability to engage in household activities. If the husband prefers that she spend more time on these activities, she may try to change her behavior using violence. Violence may also affect a woman's

work ability, which a husband who is behaving rationally would take into account.

Income coming from a woman's work also changes the bargaining framework of the intrahousehold bargaining. The amount of a transfers in a cash transfer program is often well-known public knowledge; by contrast, wives sometimes keep the amount of their salary or bonus hidden from their husband. A husband who suspects this is occurring may resort to violence to compel his wife to reveal this information. Additionally, the time horizon of the cash inflow differs in work versus cash transfer or microfinance programs, depending on the participants' perception of the duration of the program and perceived ability to repay.

Finally, work may have different psychological effects on both the husband and wife, compared to a cash transfer or microfinance program. Work exposes a woman to a different environment than her home, which may affect her perceptions of the acceptability of domestic violence or her information about places to seek help. While cash transfers and microfinance programs also compel a woman to leave the home in order to receive benefits, the duration of time spent is still shorter than at a job. Income received from a woman's work may also have different impacts on the husband, who could perceive transfer income as from the government rather than the woman and thus less of a threat to his identity.

Because of these potential reasons why work opportunities may affect women's incidence of domestic violence differently from transfers or microfinance programs, researchers have explored the relationship between employment and domestic violence, even though it is more difficult causally identify the effects of work opportunities, which are rarely randomized. One notable exception is Hjort and Villanger (2011), who worked with a flower firm in Ethiopia willing to randomize job offers and found that a job caused a statistically significant 13 percent increase the amount of physical violence a woman suffers.

In the U. S. context, Aizer (2010) examines the male-female wage gap, rather than female labor force participation, and finds that increases in relative female wages that result from plausibly exogenous changes in labor demand decrease domestic violence. Aizer (2010) may have found opposite effects from Hjort and Villanger (2011) because of differences in baseline bargaining power, as suggested by Eswaran and Malhotra (2011). Namely, women in the U.S. have higher bargaining power absent labor force opportunities, so their reservation utility would be binding and an increase in reservation utility would decrease domestic violence to keep a woman from leaving the relationship. Other studies show mixed results on the correlation between labor force opportunities and do-

mestic violence (Vyas and Watts, 2009).¹

This paper looks for evidence of this heterogeneity within a particular diverse population in Bangladesh. While I will not be able to provide causal impacts of work opportunities, I can take advantage of detailed household survey data to explore the validity of potential stories—both causal and non-causal—that could explain the observed descriptive relationship between domestic violence, household bargaining, and work.

3 Methods

3.1 Location and Summary Statistics

The data for this paper come from a survey of 1395 households outside of Dhaka, Bangladesh conducted by the author and Mushfiq Mobarak. The survey took place from August to October, 2009. The sampling frame of the survey was every bari in 60 villages located in four subdistricts (Savar and Dhamrai in Dhaka District; Gazipur Sadar and Kaliakur in the Gazipur District). On average, each village has 1782 people living in 465 households. These villages are close to Dhaka but not within the city; the average reported travel time into Dhaka is 30 minutes.

This area is a heavy-garment producing area: 34 percent of sampled women between the ages of 18 and 35 work in the garment industry. Unlike garment factories within cities, though, the factories in which survey respondents work tend not to have dormitories. Instead, garment workers commute (commuting an average of 18 minutes one-way) to factories but live in standard household arrangements. Many households are migrants; only 34.1 percent of male household heads and 11.2 percent of female household heads were born in the village in which they are now residing.

Table 1 provide summary statistics of married women in the data, broken down by whether they are currently working outside the home. Since working women are on average younger (27.7 years old) than nonworking women (who are on average 34.1 years old), I also display the difference in means (worker vs. nonworkers) after controlling for age. Taking into account these age differences is important. For instance, while women who work on average have more 0.7 years more education than those who do not, after controlling for age we see that women who work on average have 0.4 years *less* education

¹Specifically, as detailed by Vyas and Watt, the correlation between work and domestic violence is positive and significant in Peru (Flake, 2005) and Iran (Kishor and Johnson, 2004), negative and significant in Egypt (Kishor and Johnson, 2004), varies depending on the type of employment in India (Panda and Agarwal, 2005), and varies by location in Bangladesh (Naved and Persson, 2005). No correlation was found in studies in Haiti, the Philipines, Zambia, or Cambodia (Kishor and Johnson, 2004).

than women of the same age who do not work. Despite less education, women who work have a marginally higher age at marriage, fewer children, and a smaller age difference between husband and wife, relative to nonworkers. The houses of working women are also more likely to have a cement floor. Finally, women who work are considerably more likely to be migrants than nonworkers.

Table 1 also reports variables that reflect the women's status within the home. While it is unsurprising that women workers leave the household compound (bari) much more often than nonworkers due to their work schedules, they also report a greater say in household decisions and a smaller likelihood of needing a husband's permission to buy something for themselves. However, women workers are no less likely than nonworkers to say that it is ever justified for a husband to beat his wife. In fact, after controlling for age, women who work are 4.7 percentage points more likely to have ever been beaten in their life; the difference is marginally significant ($P=0.109$). The empirical evidence paper will investigate why women who work report control over household resources but do not seem to be able to translate this higher bargaining power over income into reductions in the violence that they face.

Table 2 provides summary statistics of the nature of the work done by women who participate in the labor force. Seventy-eight percent of women who are working work in the garment industry. These workers typically work long hours, an average of 11.78 hours per day versus 8.34 hours per day for nongarment workers. The average and standard deviation of wages is similar for garment and other workers; the average wage of 3000 taka per month is approximately 36 dollars US and approximately twice the minimum wage at the time of the survey of 1662 taka per month. The typical garment worker has been working for a total of 3.9 years and the typical non-garment worker has been working for 5.9.

3.2 Measures and Empirical Model

Variables in the analysis come from the survey module administered to the female household head. Because of the sensitive nature of questions about a woman's status within the household and domestic violence, we use female enumerators for this module and instructed them to politely inform other household members, including the husband, that these questions should be answered in private. Furthermore, we asked enumerators to record if, despite this request, the husband insisted on being present in the interview, which occurred in 17 percent of interviews. There was no statistically significant difference, however, in reported domestic violence in interviews in which the husband was

present.

The key outcome, domestic violence, came from the woman's response to the question "Has your husband ever beaten you?" In response, 63.6 percent of women responded "no", 8.8 responded "once", 26.9 percent responded "more than once", and 0.8 percent responded "regularly". I convert the response to a binary outcome that is equal to one if the wife has ever been beaten, which 35.4 percent were. This rate is somewhat lower than the rates found in other areas of Bangladesh², although it is difficult to know whether this difference is due to the specific population and the fact that the data are more recent than in most previous studies or due to underreporting.

To help differentiate between the different mechanisms behind the correlation between work and domestic violence, I also examine the relationship between labor force participation and a woman's reported control over resources in the household. Specifically, I use answers to the following questions:

- Do you need permission from your husband if you want to spend less than 100 Taka? More than 300 Taka? (yes/no)
- Does you need permission from your husband if you want to buy something for yourself? (e.g. bangles, coconut oil, soap)
- Does your husband consult with you often about household decisions? (never/sometimes/often/always)

While these variables are interesting precisely because they are likely to change in response to a women's labor force participation, it is also crucial to have measures of variables that determine a woman's bargaining power but are typically predetermined at the time a woman enters the labor force. I use two primary measures of predetermined bargaining power, age at marriage and education. A higher age at marriage is associated with greater bargaining power within the household (Jensen and Thornton 2003; Mathur et al. 2003), and most (82 percent) of the women in the sample who work began working after marriage. Education is also associated with a higher status within the household in Bangladesh and other locations (Quisumbing and Hallman, 2003) and is almost always finished before beginning work or marriage (Field and Ambrus, 2008) in the Bangladeshi context.

The theoretical models described in section 2 predict that there are likely to be heterogeneous effects of a woman's work opportunities on domestic violence, based on these

²Forty-two percent of women in two areas of rural Bangladesh in 1993 (Koenig et al., 2003) reported physical abuse and 67 percent reporting any type of violence (33 percent reporting major violence) in 2001/2002 (Bates et al., 2004).

initial bargaining position upon entering the labor force. Accordingly, while I begin by estimating a probit model that assesses the overall relationship between work and domestic violence:

$$Pr(\textit{Ever Beaten})_i = X_i'\gamma + \beta\textit{Work}_i + \epsilon_i \quad (1)$$

I then estimate a model that allows the effects of work on domestic violence to vary by a worker's education and age at marriage and other variables that capture a woman's bargaining power.

$$Pr(\textit{Ever Beaten})_i = X_i'\gamma + \beta_1\textit{Work}_i + \beta_2\textit{Education}_i + \beta_3\textit{Work}_i \times \textit{Education}_i + \epsilon_i \quad (2)$$

4 Results

4.1 Women's characteristics, work, and domestic violence

Table 3 shows marginal effects calculated from probit models of equation 2, which assesses how the relationship between work and domestic violence changes with the wife's age, education and age at marriage. The first column shows a statistically insignificant and close to zero correlation between work and domestic violence. Column 2 shows that there are strong age effects and work-age interactions. The probability that a woman has ever suffered domestic violence increases by 0.003 each year she ages,³ but an additional 0.011 per year if she works. To assess visually whether the age-work interaction is indeed linear, figure 1 shows a lowess curve of relationship between age and domestic violence, estimated separately among women who work and women who do not. Women below approximately age 24 who work suffer less incidence of domestic violence than women who do work. The incidence of domestic violence among women who work increases steeply with age until approximately age 30 and then levels off.

Column 3 and figure 2 depict the relationship between domestic violence, work, and age at marriage. The regression results show that there is a negative relationship between age at first marriage and domestic violence (which is borderline significant, $P = 0.111$) that is even stronger among women who work: the marginal effect of a one year increase in marriage age is an additional 0.024 point decrease in domestic violence among women who work. Figure 2 shows that there is particularly high incidence of domestic violence among women who work who were 13 or younger when first married; for women married at age 14 and older there is little difference in domestic violence between those who

³This result is unsurprising given that the measure reflects cumulative incidence of domestic violence over her life.

work and those who do not.

Similarly, Column 4 and figure 3 show the relationship between domestic violence, work, and education. An additional year of education is associated with a statistically significant 0.015 decrease in the probability that a woman suffers domestic violence. Among women who work the decrease in domestic violence associated with an additional year of education decreases is an additional 0.021. Similar to the case with age at marriage, figure 3 shows that women with very low education (2 years or less) who work suffer especially high rates of domestic violence. At higher levels of education, an additional year of education is associated with the same decrease in risk for women who work and women who do not work.

I next examine the relationship between these variables and the intermediate outcome of autonomy. In a theory of intra-household bargaining such as that of Eswaran and Malhotra (2011), a woman whose bargaining power before entering the labor force is less likely to face domestic violence upon entering the labor force. That is, if education is associated with a lower increase in domestic violence among women who work, this is not because their autonomy increases by more when they work, but rather because their autonomy was higher even before working. So we would expect to see a higher rates of autonomy among women who work, and women with more education, but not a positive interaction between the two. Table 4 uses three measures of self reported decision-making power—as well as a the first principal component from principal components analysis that combines the first three—to test this theory. Overall, the three main patterns that emerge support the Eswaran and Malhotra theory. First, panel A shows that work is associated with higher autonomy. Second, panel B shows that education (though not age at marriage, conditional on education) is associated with higher autonomy, as is generally found in various other developing country contexts (Lloyd et al., 2009). Third, there's no evidence that work is associated with differentially higher autonomy in women with more education. In fact, if anything, the interaction term between work and education is negative, suggesting that work and education are closer to substitutes than complements in raising a woman's bargaining power.

4.2 Alternative explanations

Having established a relationship between a woman's status, bargaining power, and domestic violence upon entering the labor force, I next look for evidence for mechanisms other than difference in pre-work bargaining power than can explain the observed relationships. First I examine whether, conditional on a wife's characteristics, a husband's

characteristics (namely, his education, age and age at marriage) also affect the relationship between work and domestic violence faced by the wife. Columns 1 and 2 of table 5 show that both the main effects of the age difference between a husband and wife and his education, as well as the interactions between these variables and whether the wife works, are uncorrelated with domestic violence. The third column shows that, unlike in Macmillan and Gartner (1999), there is no stronger relationship between a woman's work and domestic violence if her husband is unemployed. If anything, the relationship is stronger if he is employed. Finally, the fourth column shows that there is no increased violence if a wife's income is high relative to their husband's income face higher domestic violence, which might also be expected to increase frustration in the man.

These results argue against a story in which assortative matching allows more empowered women to attract better husbands unlikely to resort to domestic violence to reassert control after a wife enters the labor force. If this story were true, we would expect that controlling for a husband's characteristics would diminish the effects of the wife characteristics. Instead, they remain almost identical to the magnitude of those in table 3 which are unconditional on husband characteristics. Additionally, they provide some evidence against a backlash story, inasmuch as backlash theories would predict that educated husbands or those who have jobs themselves are less likely to resort to violence to express frustration when a wife enters the labor force.

I next examine whether a lower-status woman is more likely to enter the labor force in response to economic hardship, which might also provoke domestic violence, than a higher-status woman who may be more likely to enter due to "pull" factors such as the availability of a good job. The result in table 5 that domestic violence is no higher among women whose husbands are unemployed provide some evidence that a husband's job loss does not both push women into the labor force and provoke domestic violence. However, violence could be particularly common in the households of lower-status women whose husbands are working but in which household income is low. Accordingly in table 6 test whether domestic violence is more common in households where the woman works and total household income is low, which would suggest that bad economic situations prompt female labor force participation and domestic violence. However, using either total household income or income per capita, there is no evidence that work is more strongly correlated with domestic violence in lower income families. Furthermore, note that the results in table 4 showing higher reported autonomy among women who work are also difficult to reconcile with a story in which economic shocks are driving both labor force participation and the domestic violence faced by women.

Finally, given the high profile and occasionally controversial nature of the garment

industry in Bangladesh, I test to see whether the incidence of domestic violence differs among women who work in that industry versus elsewhere. The first column of table 7 shows that women who work in the garment industry actually face significantly less domestic violence than women who work in other jobs. The second column adds interaction terms between work and age, age at marriage, and education; with these controls, the coefficient on garment industry drops in magnitude and becomes statistically insignificant from zero. Therefore garment jobs do not seem to be protective per se, rather, they tend to attract relatively higher status women who face less domestic violence upon entering work.

5 Conclusion

While there is growing policy interest in providing jobs to women to promote gender equality and development more broadly, policy makers should be aware of potential negative consequences in the lives of female workers, such as domestic violence. This paper has shown that female workers in Bangladesh face greater rates of domestic violence than non-workers, but only among those workers who have less education or young age at first marriage. I argue that these results are consistent with a theory in which domestic violence is used instrumentally by husbands to counteract the increase in bargaining power women receive upon working, but women whose bargaining power is sufficiently high can flee violent marriages and thus do not face this increase in violence.

These results point to several policy implications for policymakers interested in counteracting domestic violence. While an instrumental violence model can ultimately deliver an optimistic result—women whose outside option improves sufficiently will not face increased violence and may even face decreased violence—women whose bargaining power is low initially are risk for increased violence. Therefore when there is the expansion of new jobs in an area, particularly those jobs that higher low-skilled women whose status within the household is likely to be low, policymakers should consider complementary domestic violence reduction efforts such as information campaigns. If these efforts are successful, communities can reap the benefits of increased female labor force participation without the adverse effects of domestic violence.

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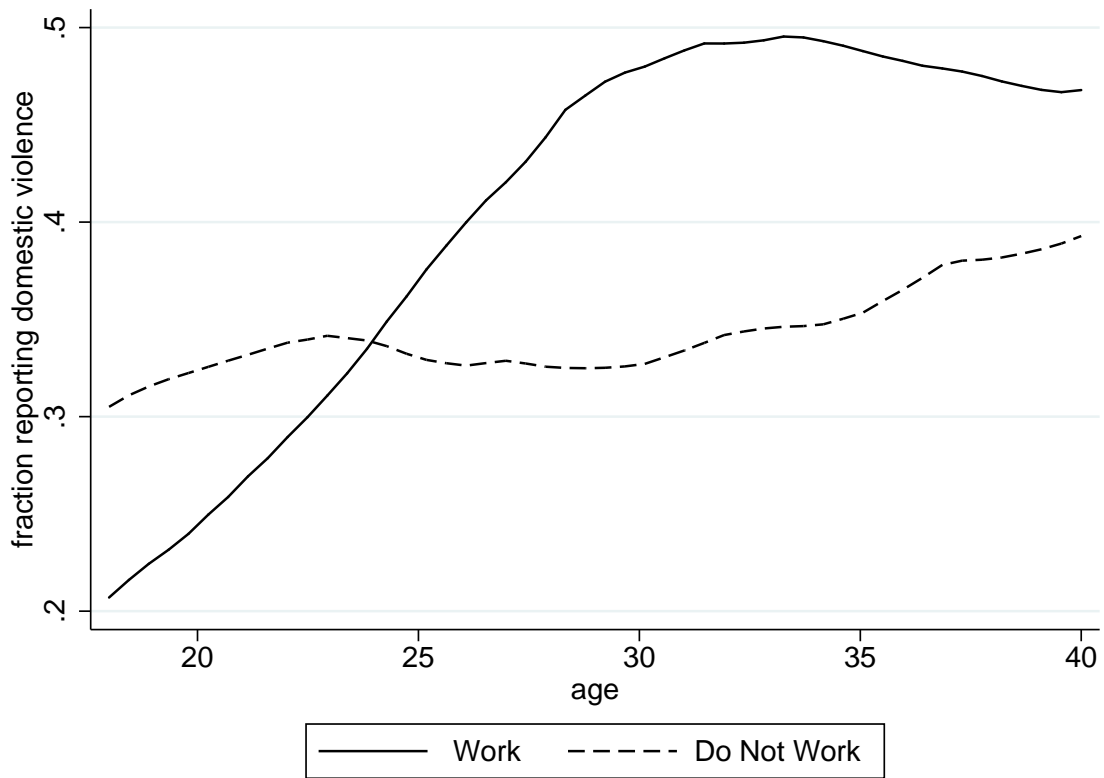


Figure 1: Domestic Violence, Labor Force Participation, and Age

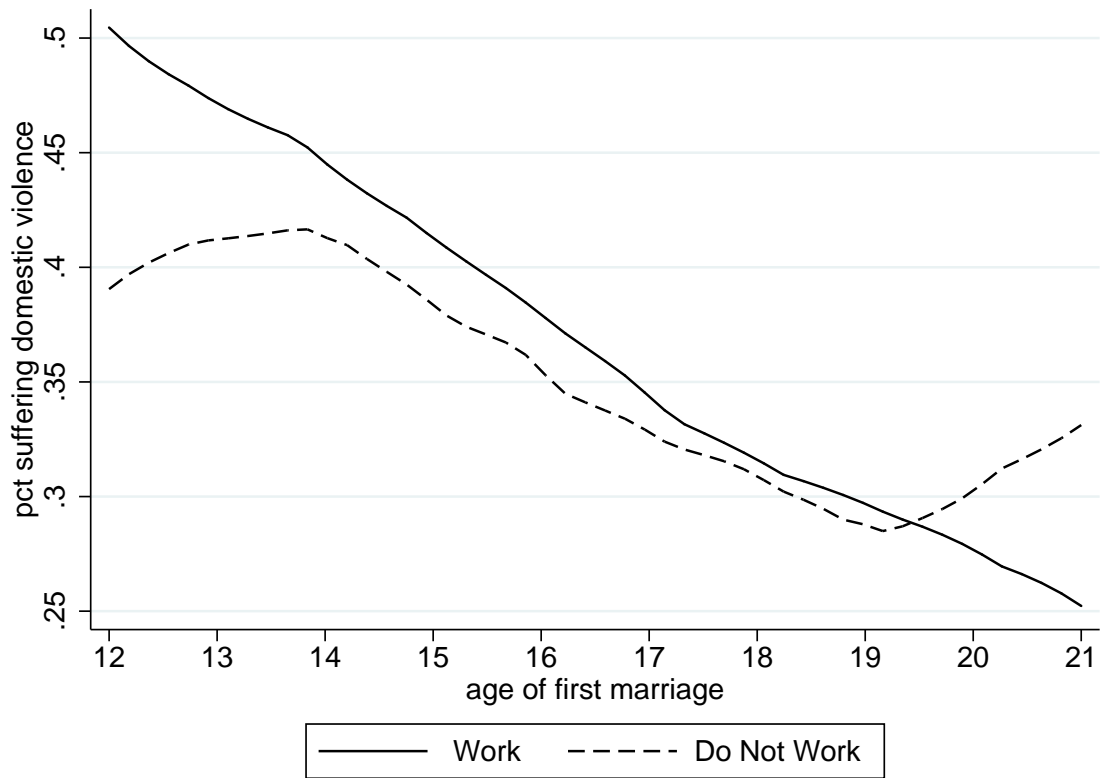


Figure 2: Domestic Violence, Labor Force Participation, and Age at Marriage

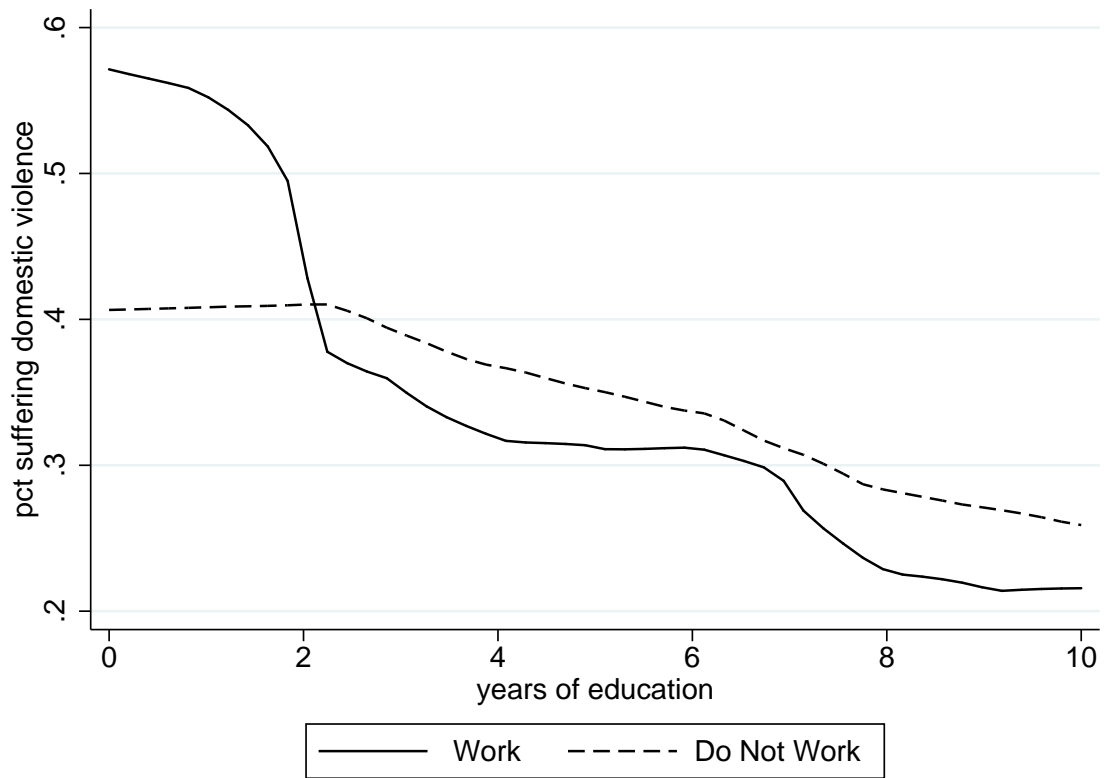


Figure 3: Domestic Violence, Labor Force Participation, and Education

Table 1: Characteristics of Married Women in Sample (n=1334)

variable	Work outside home	Do not work outside home	Difference (workers mean - nonworkers mean)	P-value for difference	Difference, controlling for age	P-value for difference, controlling for age
age	27.671	34.41	-6.739	0.000	n/a	n/a
education (years)	4.524	3.825	0.699	0.001	-0.391	0.048
husband education (years)	5.425	4.835	0.590	0.029	-0.303	0.255
age at first marriage	16.531	15.992	0.539	0.002	0.237	0.179
age gap, husband - wife	6.569	8.997	-2.427	0.000	-1.882	0.000
house has cement floor	0.786	0.525	0.261	0.000	0.215	0.000
height (cm)	150.534	151.033	-0.499	0.203	-0.466	0.246
number of children	2.058	2.896	-0.839	0.000	-0.141	0.088
originally from village	0.029	0.135	-0.106	0.000	-0.081	0.000
ever beaten by husband	0.374	0.358	0.017	0.554	0.047	0.109
believes it is ever okay for a husband to beat a wife	0.609	0.619	-0.010	0.723	0.001	0.981
leaves bari once a week or less	0.111	0.728	-0.616	0.000	-0.610	0.000
need husband's permission to buy something for self	0.281	0.409	-0.127	0.000	-0.099	0.001
husband "always" consults on hh	0.477	0.382	0.095	0.001	0.084	0.006

Table 2: Characteristics of Women in Sample Who Work Outside the Home (n=441)

variable	Garment Industry (n=338)		Non-Garment (n=97)		P-value
	mean	std dev	mean	std dev	diff in means
typical hours per day	11.78	2.448	8.335	1.972	0.000
wage (taka)	3050.683	1431.87	2916.546	1407.349	0.415
experience (years)	3.858	3.313	6.92	5.883	0.000
commute time (minutes) ^a	17.97	11.96	n/a	n/a	n/a

(a) data available for garment industry workers only

Table 3: Probit Estimates of relationship between Wife Characteristics and Domestic Violence

	Dependent variable = 1(Ever Been Beaten)				
Work	0.017	-0.262***	0.420***	0.120***	0.149
	[0.036]	[0.097]	[0.158]	[0.043]	[0.193]
Age		0.003**			0.000
		[0.001]			[0.002]
Work X Age		0.011***			0.009**
		[0.003]			[0.003]
Age First Marriage			-0.009		-0.003
			[0.005]		[0.006]
Work X Age First Marriage			-0.024**		-0.019*
			[0.009]		[0.010]
Education				-0.015***	-0.014***
				[0.004]	[0.005]
Work X Education				-0.021***	-0.009
				[0.008]	[0.009]
Observations	1,322	1,322	1,321	1,322	1,321
R-squared	0.000	0.019	0.016	0.034	0.045

Standard errors in brackets, clustered at the level of the village. *** p<0.01, ** p<0.05, * p<0.1

Table 4: Autonomy Measures

Estimation Method	Ordered Probit Consults on HH decisions	Ordered Probit Need Permission	Probit Permission to buy for Self	OLS Composite Autonomy
<i>Panel A: Average Effects of Work</i>				
Work	0.215*** [0.066]	0.416*** [0.070]	0.127*** [0.027]	0.590*** [0.093]
Observations	1,284	1,321	1,321	1,284
<i>Panel B: With Other Controls and their Interactions with Work</i>				
Work	-0.360 [0.474]	0.001 [0.494]	0.085 [0.194]	-0.117 [0.658]
Age	0.000 [0.004]	-0.001 [0.004]	-0.002 [0.002]	-0.001 [0.005]
Work X Age	0.008 [0.009]	0.010 [0.009]	0.003 [0.004]	0.020* [0.012]
Age First Marriage	0.005 [0.014]	-0.002 [0.014]	0.004 [0.006]	0.006 [0.019]
Work X Age First Marriage	0.016 [0.024]	0.015 [0.025]	-0.002 [0.010]	0.015 [0.034]
Education	0.038*** [0.012]	0.044*** [0.013]	0.015*** [0.005]	0.075*** [0.017]
Work X Education	0.014 [0.021]	-0.031 [0.022]	-0.004 [0.009]	-0.034 [0.029]
Observations	1,284	1,321	1,321	1,284

Consults on HH decisions: 0 = never; 1 = sometimes; 2 = often; 3 = always

Need permission:

0 = need permission for a purchase of even 100 taka

1 = need permission for a purchase of 300 taka but not 100 taka

2 = do not need permission even for purchases over 300 taka

Permission to buy for self: 0 = yes; 1 = no

Composite autonomy: first principal component taken from principal component analysis that includes all three autonomy variables, where categorical variables converted into a series of dummies

Table 5: Husband Characteristics

	Dependent variable = 1(Ever Been Beaten)			
Work	0.373**	0.108**	-0.073	-0.024
	[0.176]	[0.050]	[0.066]	[0.079]
Age First Marriage	-0.009			
	[0.006]			
Work X Age First Marriage	-0.023**			
	[0.010]			
Age Difference Husb-Wife	0.001			
	[0.003]			
Work X Age Difference	0.005			
	[0.006]			
Education		-0.011*		
		[0.006]		
Work X Education		-0.023**		
		[0.011]		
Husband Education		-0.006		
		[0.005]		
Work X Husband Education		0.003		
		[0.009]		
Husband Work			-0.026	
			[0.034]	
Work X Husband Work			0.105	
			[0.079]	
Work X Own Wage				0.006
				[0.010]
Work X Wage Gap Husb-Wife				0.001
				[0.007]
Observations	1,320	1,215	1,215	1,215

Standard errors in brackets, clustered at the level of the village. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Columns 2 and 3 lose sample size because the education variable is unavailable if husband was away from hh at the time of the survey and thus not classified as a hh member and surveyed

Table 6: Household income

Dependent variable = 1(Ever Been Beaten)		
Work	0.017	-0.262***
	[0.036]	[0.097]
HH income	-0.002	
	[0.004]	
Work X HH income	-0.002	
	[0.006]	
HH income per capita		-0.013
		[0.011]
Work X HH income per capita		-0.015
		[0.013]
Observations	1,322	1,322

Standard errors in brackets, clustered at the level of the village.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 7: Garment Industry and Domestic Violence

Dependent variable = 1(Ever Been Beaten)		
Work	0.096*	0.18
	[0.057]	[0.240]
Work X Garment Sector	-0.102	-0.025
	[0.066]	[0.054]
Age		0.000
		[0.002]
Work X Age		0.008**
		[0.003]
Age First Marriage		-0.003
		[0.006]
Work X Age First Marriage		-0.019
		[0.012]
Education		-0.014**
		[0.005]
Work X Education		-0.009
		[0.009]
Observations	1,322	1,321

Standard errors in brackets, clustered at the level of the village.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.