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Attitudes and norms about intimate partner violence: What makes women more impressionable?

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Abstract

We evaluate the causal impact of average neighbourhood attitudes justifying intimate partner violence (IPV) on own attitudes using nationally representative data from the fifth wave of the National Family Health Survey of India. To address endogeneity concerns in estimating peer influences, we utilize exogenous variation in the average exposure of neighbourhood women to their parental IPV in a leave-one-out instrumental variable strategy. We find robust evidence that a 1 sd increase in a woman's average neighbourhood attitudes justifying IPV leads to a 0.36 sd increase in her attitudes justifying the same. We establish the importance of peer influences on a woman's acceptability of IPV as justifiable, especially among less educated, unemployed, having no assets or media exposure and bearing more daughters than sons, making them more impressionable. This underscores the need for enhanced implementation of policies targeting women's empowerment to arrest the perpetration of gender-biased social norms.

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Ordering of Authors: The names of the authors have been listed in alphabetical order of surname. All authors have contributed equally and significantly to this manuscript.

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1 Introduction

With one in three women facing some kind of domestic violence by their intimate partners/husbands in their lifetime, there is growing consensus that violence against women is a public health concern of epidemic proportions (WHO, 2013, 2021). Wang (2016); Jewkes (2002); Straus (2004); Gage (2005); Mookerjee et al. (2021); Simon et al. (2001); Sambisa et al. (2010); Johnson and Das (2009); Hindin (2003); Uthman et al. (2009) provide strong evidence that attitudes about what is an acceptable behaviour pattern is a prominent predictor of the incidence of intimate partner violence (IPV). Within a cultural context, prevalent attitudes about IPV also become important predictors of individual attitudes towards IPV and, as such, may serve as risk factors for women to be victimized by IPV. The trouble with such attitudes is that living in societies that justify acts of violence as a partner's right to abuse the woman when she deviates from what is considered *socially* acceptable often results in influencing beliefs about what is *personally* acceptable (Visaria, 2000). With this in mind, in this paper, we attempt to understand how exposure to gendered patterns in societal attitudes towards IPV, specifically about what is a justifiable behaviour, affects one's own attitudes about IPV. Put differently, what we try to answer here is: if there are gendered patterns in the attitudes of women about the acceptability of IPV within their social network, to what degree does it make a woman impressionable about IPV being justified? We answer this question in the context of India where social conditioning for men and women are very different owing to the pre-existing cultural norms (Bhattacharya, 2016).

A lot has been written about the influence of social factors like behaviour of peers and neighbours on individual *behaviour* across various domains including education (Calvo-Armengol et al., 2009; Antecol et al., 2016; Feld and Zölitz, 2017; Sacerdote, 2011; Fletcher, 2015), the realms of alcohol, tobacco, or drug usage (Fletcher and Ross, 2018; Gaviria and Raphael, 2001; McVicar and Polanski, 2014), consumption habits, income distribution (Roychowdhury, 2019; Grohmann and Sakha, 2019; Moretti, 2011), and employment choices (Mota et al., 2016). Evidence also documents notable influences of peer attitudes and actions, family and community values, and national norms on individual *attitudes* (Ali and Naylor, 2013; Flood and Pease, 2009; Herrenkohl and Jung, 2016). We contribute to the literature on understanding how *peer attitudes* affect *individual attitudes* towards IPV. Specifically, we estimate the causal effect of the average neighbouring women's attitudes about IPV on a woman's own attitudes regarding IPV thus capturing, to some extent, the idea of impressionability amongst women.

In general, factors that affect attitudes towards IPV primarily arise from creating a conflict between the reality and the notion of male superiority (male-backlash), exposure to impartial

social networks, and exposure to non-conformist ideas through modern media and education (Rani et al., 2004). Simultaneously, the concept of a ‘just world’, where individuals believe that people receive what they deserve and the social systems affecting them are fair, legitimate, and justifiable (Kay et al., 2005), leads to perceiving a victim of violence as partly responsible for their plight (female-guilt). Prevailing social norms often compel women to take up gendered/inferior roles in the family, and this hegemony fosters an attitude of acceptance of IPV among women who internalize it as part of their daily lives (Biswas, 2017; Biswas et al., 2017). In patriarchal setups like India, attitudes towards spousal violence can also inherently differ between genders owing to the diverse social conditioning of men and women. Bhattacharya (2016) argues that the samples of women and men, thus, ought to be treated as samples drawn from two different sub-populations. Drawing from this idea, we specifically consider the sub-population of women and the views of women regarding acceptance of IPV to answer our question. The fact that women may find any justification for accepting IPV and to the extent that women interact with other women living in their close proximity, neighbours are bound to influence their own acceptance of IPV. Since domestic violence is considered acceptable when there is wilful (versus unintended) transgression of norms by the woman (Yount et al., 2013; Tsai et al., 2017; Reitmann et al., 2020), we assert that it is important to quantify the magnitude of the impact of one’s peers’ attitudes on own attitudes.

For our analysis, we utilize nationally representative data from the latest round of the National Family Health Survey (NFHS-5) conducted in 2019-21 for India. Using the module available on domestic violence and the couple’s data, we exploit the plausibly exogenous variation in the neighbouring women’s exposure to their parental violence as an instrument for average neighbouring women’s attitudes about IPV and estimate our desired causal effect on a woman’s own attitudes about IPV. Similar to Mookerjee et al. (2022), we define a peer group as the neighbouring women residing in close geographical proximity to woman i .

The results point to consistently large positive effects of peer attitudes on one’s own attitudes about IPV. Utilizing the OLS estimation as a reference for the positive association we find, we utilize an Instrumental Variable (IV) approach and note that a one sd increase in average neighbouring women’s attitudes towards IPV leads to a statistically significant increase of 0.36 sd in the likelihood of a woman i ’s justification of IPV. Exploring this to a greater degree, we find evidence of notable heterogeneity in these effects. In particular, we note higher effects for less educated women, unemployed women, and women who do not own any assets and have no media exposure, indicative of the idea that less empowered women show greater acceptability of IPV when there is a wilful deviation from the norm. We also slice our sample by the gender

composition of her children and observe greater effects for the subset of individuals with a higher number of daughters than sons. Once more, our finding suggests that this group perceives itself as partially accountable for its circumstances, affirming the existence of the phenomenon of female guilt. Further, we find interesting heterogeneity by caste, social group, religion and region of India. We find larger peer influences in urban settings, among women belonging to larger and poorer households, and among Muslims and Scheduled Castes (SCs). Our results remain robust to different measures of our outcome variable, additional sample restrictions and falsification tests. We also provide suggestive evidence that neighbouring women’s acceptability of IPV does indeed translate into a higher incidence of physical domestic violence at the neighbourhood level in line with [Dibble and Straus \(2017\)](#), and [Mookerjee et al. \(2021\)](#) and, as a result, leads to a change in an individual woman’s justification of IPV. This indicates that gendered patterns in attitudes of peers about violence as a justifiable act impact the actual perpetration of violent behaviour, in turn affecting a woman’s own ideas about IPV being justified.

Our conclusion that peer attitudes have such a robust effect on one’s own attitudes regarding IPV documents an important but typically under-researched question about attitudes owing to the inherent difficulty in their measurement. Although we recognize that we do not solve the measurement issue, we provide new insights into the magnitude of peer effects on individuals. This is important because within patriarchal setups, the expectations to conform to regressive and gendered social norms and attitudes may lead to greater persistence of such norms. With caution, we attempt to shed light on these salient but typically unobservable factors that may determine violence against women.

The rest of the paper proceeds in the following order. In [Section 2](#) we discuss the dataset used and the construction of our sample. [Section 3](#) presents the empirical framework and identification. [Section 4](#) presents the main findings of the paper. Furthermore, in [Section 5](#) we conduct robustness checks to test the sensitivity of our findings. [Section 6](#) lays out the heterogeneity analysis, followed by [Section 7](#) which discusses a potential mechanism driving our results. Finally, in [Section 8](#) we conclude.

2 Data

2.1 NHFS data

We utilize the fifth round of the National Family Health Surveys (NFHS-5) of India for 2019-21. NFHS is a nationwide cross-sectional demographic health survey for India. It provides information on various topics such as population demographics, health and nutrition status,

women empowerment, gender role attitudes, marital histories, domestic violence and fertility preferences. It is conducted by the International Institute for Population Sciences (IIPS) in Mumbai administered under the Ministry of Health and Family Welfare (MoHFW), Government of India, and is a part of the global Demographic Health Survey (DHS) program.¹ The sample is drawn using stratified random sampling.²

We utilize the couples module, which consists of a record of each couple, where the respondent is identified as the woman. This module encompasses data for married couples or cohabiting partners, where both individuals have declared their marital status to each other and have participated in individual interviews. The couples are interviewed for a subset of the households in NFHS-5, and the module consists of 57,693 observations, with women between the ages of 15 and 49 years and men between 15 and 54 years. We construct our sample as follows. First, we restrict the data so that we have a unique couple per household to exclude any within-household dynamics and capture between-household neighbourhood effects. This reduces the sample to 49,983 observations. Second, we restrict our sample to women who are married only once to ensure that their responses about attitudes towards domestic violence pertain to their current union. This brings the sample to 49,175 observations. Third, we only consider those clusters of households in the data where the number of households in the cluster is at least greater than one. We do this because we define our neighbourhoods as all the other households that belong to the same cluster for any household i . It further reduces our sample to 48,954 observations. Our analytical sample consists of 48,155 observations, accounting for some missing observations in variables.³

2.2 Attitudes regarding domestic violence as a justified behaviour

Our outcome variables include questions that are asked to the women regarding their attitudes about whether beating the wife is justified in the following scenarios: (1) *if the wife goes out without telling her husband*, (2) *neglects children*, (3) *argues with husband*, (4) *refuses sex*, (5) *does not cook food properly*, (6) *is unfaithful*, and (7) *is disrespectful*. Each response is coded as a binary variable, taking the value 1 if their response is *yes* and 0 otherwise. We then create an index of acceptability of IPV, $AttitudesIPV$, such that it takes the value 1 if she justifies violence for any of the above cases and 0 otherwise, thus rendering our variable binary.

2.3 Variable of interest

The main variable of interest in our analysis is the neighbouring women's attitudes regarding IPV as a justified behaviour. We construct our neighbouring women's attitudes regarding

IPV, $NeighAttitudeIPV$, by taking an average of IPV attitudes for women in all households that belong to the same cluster, except household i . Since we take an average over neighbourhood attitudes regarding IPV for each household in the cluster, our resulting neighbourhood variable lies between 0 and 1.

2.4 Selection of controls

Recognizing that all non-experimental economic research is vulnerable to omitted variable bias, as highlighted by [Oster \(2019\)](#), we incorporate a wide array of meticulously selected comprehensive controls that are observable in our analysis. These include women’s characteristics, husband’s characteristics, household characteristics and neighbourhood characteristics. Woman-level controls include woman’s age (in years), age at cohabitation (in years), education (in completed years), current work status (yes/no), house/land ownership (yes/no), bank account (yes/no), mobile phone (yes/no), exposure to mass-media (yes/no), normal body mass index (BMI) (yes/no/missing) to incorporate a measure of her general health status, gender gap between children (difference in the number of sons and daughters), exposed to parental IPV (yes/no/missing) and the total number of years she has resided in the same location. Husband controls include age (in years), age at cohabitation (in years), education (in completed years), current work status (yes/no), house/land ownership (yes/no) and media exposure (yes/no). Household level controls include indicators for religion (Hindu/Muslim/Christian/others), social group (scheduled caste/scheduled tribe/other backward class/others/missing), wealth category (poor or rich), whether the household is male-headed (yes/no), age of the head (in years), household size and indicator for the area of residence (rural/urban). Given that we are trying to estimate the effects of neighbourhood women’s attitudes on a woman’s own attitudes towards violence, we also include the average of women, husbands and household characteristics for the neighbourhood as a set of controls in our analysis.⁴

2.5 Descriptive patterns - Analytical sample

Table 1 provides the summary statistics for our analytical sample. Examining own and neighbour attitudes about IPV, we note that 44% of the women and 44% of neighbouring women, on average, believe that domestic violence is a justified behaviour. Besides, an average woman’s (man’s) age is approximately 33.9 (38.5) years, has about 6.5 (7.8) years of education and has 0.08 fewer daughters than sons. The mean age at cohabitation for women (men) is approximately 19 (23) years. Approximately 30% (90%) of the women (men) are employed. 51% (82%) own a house or land, 81% have a bank account, 55% own a mobile phone, and

approximately 53% (57%) have some media exposure and have stayed in the same location for approximately 15.5 years.

Demographics at the household level suggest that 44% of the households in our analytical sample belong to the poorest and poor income category in terms of wealth index.⁵ Roughly 76% are Hindus, 12% Muslims, 7% Christians and 5% belong to other religions. Approximately 19% of the households belong to the Scheduled Castes, 20% are Scheduled Tribes, 38% are OBCs, and about 17% belong to other social categories. 93% of the households are male-headed, 75% reside in rural areas with the average age of the head of the household being 45 years and an average household size of approximately 4.89 members. The distribution of the neighbourhood average of attitudes towards IPV and the neighbourhood average of exposure to parental IPV for our analytical sample is presented in Figure 1. The scatter plot of the percentage of women who justify IPV by average neighbourhood attitudes towards IPV is shown in Figure 2.

Figure 1: Distribution of average neighbourhood attitudes towards IPV and average exposure of women in the neighbouring households to parental IPV.

Figure 2: Percentage of women’s attitudes towards IPV by the average neighbourhood attitudes towards IPV

[Table 1 here]

3 Empirical framework

3.1 Estimation strategy

We use the following empirical specification to investigate the effect of neighbourhood women’s attitudes regarding IPV as a justified behaviour on a woman’s own attitudes towards IPV:

$$AttitudesIPV_i = \beta_0 + \beta_1 NeighAttitudesIPV_{-i} + \beta_2 \mathbb{X}_i + \beta_3 \bar{\mathbb{N}}_{-i} + \lambda_d + \epsilon_i \quad (1)$$

where $AttitudesIPV_i$ refers to a woman’s attitudes about whether violence is a justified behaviour in the household i ; $NeighAttitudesIPV_{-i}$ denotes the average neighbourhood women’s attitudes about whether IPV is justified in all the households belonging to the same cluster of households excluding household i ; \mathbb{X}_i is the vector of woman-specific controls, husband’s characteristics and household characteristics; $\bar{\mathbb{N}}_{-i}$ is the vector of average neighbourhood con-

trols excluding household i ; λ_d denotes district dummies and ϵ_i is the idiosyncratic error term. Our parameter of interest, β_1 , captures the effect of the neighbouring women’s attitudes on a woman’s attitudes about IPV. All standard errors are clustered at the neighbourhood level.

The causal interpretation of β_1 hinges on the assumption that, given the comprehensive set of controls and the district fixed effects incorporated in the regression, there are no omitted variables correlated with both $AttitudesIPV_i$ and $NeighAttitudesIPV_{-i}$. It also necessitates that causality not run from our outcome variable, $AttitudesIPV_i$ to $NeighAttitudesIPV_{-i}$. We acknowledge the potential source of endogeneity due to the presence of unobservable factors at the group level (highlighted by Manski (1993); Sacerdote (2001)) that could influence both an individual’s actions and those of their neighbours. Such influences might stem from underlying social norms that are not directly observable but affect the behaviour of households within the same neighbourhood. Additionally, empirical models of social interactions often encounter identification challenges, as the coefficient β_1 reflects endogenous peer effects (discussed by (Brock and Durlauf, 2001; Manski, 1993)), making it challenging to ascertain whether an individual’s decision is causing or being influenced by the decisions of their reference group. Moreover, there could be a bias in the relationship between neighbourhood characteristics and outcomes due to selection into neighbourhoods. A systematic spatial selection process may exist, rendering the reference groups endogenous. These potential sources of endogeneity may restrict the ability of a simple Ordinary Least Squares (OLS) estimation to provide an unbiased and consistent estimate of neighbouring women’s attitudes towards IPV. To alleviate such concerns, we follow an Instrumental Variable (IV) estimation strategy along with the use of district-level fixed effects to address the unobserved group-level characteristics that could jointly determine $AttitudesIPV_i$ and $NeighAttitudesIPV_{-i}$.

3.2 Instrumental variable estimation

We estimate a two-stage IV model, which is specified as follows:

$$NeighAttitudesIPV_i = \alpha_0 + \alpha_1 NeighParentsIPV_{-i} + \alpha_2 \bar{X}_i + \alpha_3 \bar{N}_{-i} + \gamma_d + \eta_i \quad (2)$$

$$AttitudesIPV_i = \beta_0 + \beta_1 NeighAttitudesIPV_{-i} + \beta_2 \bar{X}_i + \beta_3 \bar{N}_{-i} + \lambda_d + \epsilon_i \quad (3)$$

The first stage is given by Equation (2), and Equation (3) is the structural equation. The average neighbourhood women’s attitudes towards IPV, $NeighAttitudesIPV_i$, is instrumented by $NeighParentsIPV_{-i}$, the average exposure of women in the neighbouring households to

parental IPV in their natal family. Specifically, we create a binary variable that takes a value one for a woman if she reports to have witnessed her father physically abusing her mother and zero otherwise. We then construct our instrument, $NeighParentsIPV_{-i}$ as the average exposure to parental IPV, over all the neighbouring households, except household i . As above, \mathbb{X}_i is the vector of woman, husband, and household level characteristics; $\bar{\mathbb{N}}_{-i}$ is the vector of average neighbourhood controls excluding household i and γ_d or λ_d denote district dummies. We use two-stage least squares (TSLS) estimation and cluster standard errors at the neighbourhood level.⁶

3.3 Validity of instrument

Before we conduct our estimations, we ought to examine whether average neighbourhood women’s exposure to their parental IPV serves as a valid instrument for average neighbourhood women’s attitudes towards IPV. To begin with, we note that the average neighbourhood exposure to parental IPV is strongly correlated with average neighbourhood attitudes towards IPV. Figure 2 shows a strong positive correlation between our IV and the main variable of interest. Table 2 presents the results of the first-stage regressions based on Equation (2). In column (1), we regress $NeighAttitudesIPV_{-i}$ on $NeighParentsIPV_{-i}$ without any additional controls and find a strong positive coefficient of 0.381 between them. This coefficient is statistically significant at 1% level of significance and the F-Statistic for the regression specification is 945.17. As we move from columns (2) to (4), we subsequently extend the set of controls to include woman, husband, and household level characteristics in column (2), neighbourhood characteristics in column (3) and district fixed effects in column (4). Columns (2) to (4) show that our instrument, $NeighParentsIPV_{-i}$, continues to be a strong predictor of average neighbourhood attitudes towards IPV i.e. $NeighAttitudesIPV_{-i}$. The coefficient continues to be statistically significant at 1%, and tests of weak and under-identification are rejected.

[Table 2 here]

Further, we argue that our instrument, average neighbouring women’s exposure to parental IPV, does not have a direct impact on our outcome variable, woman i ’s attitudes towards IPV. The reason for this is twofold. First, there is a temporal dimension at play here with a woman typically experiencing parental IPV within her natal family either during her formative years or prior to her marriage and subsequent relocation on account of marriage. Second, given the prevailing cultural norms in India, it is common for a woman to move from her natal family home to live with her husband after marriage (Mookerjee et al., 2022) as such, making it unlikely that

a woman’s attitudes toward IPV would be directly influenced by the exposure of neighbouring women to their parental IPV that occurred prior to their marriage.

However, two scenarios could pose challenges to the validity of our instrument. First, the cohabitation of a married woman and her parents within the same neighbourhood could result in them being immediate neighbours to one another. In such instances, the average neighbourhood exposure to parental IPV may directly influence women’s attitudes towards IPV. Analyzing a sample of 34000 married women from the India Human Development Survey (IHDS) 2012, [Chatterjee and Desai \(2021\)](#) present compelling evidence that this is unlikely to be a cause for concern in our case since, on average, 81.3 percent women relocated to a different village or town post-marriage. Nevertheless, as a robustness check, we restrict our sample to households with no daughters living away to further alleviate this concern. This enables us to eliminate the potential scenario where a married daughter and her parents live in close proximity within the same neighbourhood.⁷

Second, there is a possibility that a married woman and her current neighbour resided in the same neighbourhood prior to her marriage. In such cases, they would have been neighbours both prior to and following marriage. This scenario would violate the exclusion criterion, as the exposure of her current neighbouring women to inter-parental violence could also directly influence her attitudes toward IPV. This is because she may have been exposed to the inter-parental violence of her current neighbouring women even before her marriage. [Mookerjee et al. \(2022\)](#) offer suggestive evidence that this is not likely a concern in the Indian setting. Relying on IHDS conducted in 2004, they ascertain the variability in travel time from a woman’s current residence to her natal family’s location within the neighbourhood. Their findings reveal that the average neighbourhood standard deviation of travel time between a woman’s current residence and her natal family is 3.72 hours (equivalent to a driving distance of approximately 150-200 km). While we also recognize that this does not entirely alleviate the concern, this is indicative of it not being a significant issue.

4 Results

4.1 Baseline results

Table 3 presents the OLS and IV-TSLS results of the effect of average neighbouring women’s attitudes towards IPV on a woman’s own attitudes about IPV in columns (1)-(4) and (5)-(8), respectively. Columns (1) to (4) present the estimates with the set of controls sequentially extended. Column (1) captures the initial association between average neighbourhood attitudes

and women’s own attitudes with no controls. The association is statistically significant at 1% level of significance. As we move across to columns (2) and (4), we add the woman, husband, and household level characteristics in column (2), neighbourhood characteristics in column (3) and district fixed effects in column (4). Adding comprehensive controls to our specifications reduces the magnitude of the association. However, we continue to find a statistically significant effect of neighbouring women’s attitudes on a woman’s own attitudes. Column (4) shows that one percentage point (pp) increase in the neighbourhood average of women who justify IPV increases a woman’s own likelihood of justifying IPV by 0.41 percentage points (pp). In terms of standard deviations (sd), it means one sd increase in $NeighAttitudesIPV_{-i}$ is positively associated with a 0.28 sd increase in the likelihood of woman’s justification of IPV.⁸ Overall, thus, the OLS estimates suggest that the effect of average neighbourhood attitudes on woman’s own attitudes is positive. Although these results are not causal, they serve as valuable reference points for comparison with our IV-TSLS estimates.

We present the IV-TSLS estimates in columns (5) to (8) in the same progression as our OLS specifications in columns (1) to (4). Based on the specification in which we do not include any controls, we find that a one pp increase in the neighbourhood average of women who justify IPV leads to a 0.91 pp increase in the likelihood of a woman’s justification attitude towards IPV. As before, we observe a fall in the magnitudes of coefficients as we progress from column (5) to (8). Upon inclusion of woman, spousal, and household level characteristics in column (6), the marginal effect of $NeighParentsIPV_{-i}$ on $AttitudesIPV_i$ is 0.78. When we also include neighbourhood characteristics, this estimate changes marginally: one pp increase in the average neighbourhood attitudes causes a 0.77 pp increase in the probability of a woman’s justification of IPV. Our most preferred IV specification, including the district fixed effects, is column (8). Upon inclusion of woman, spousal, household, neighbourhood level characteristics and district fixed effects, one pp increase in the neighbourhood average of women who justify IPV leads to 0.53 pp increase in the likelihood of a woman’s justification attitude towards IPV. In terms of sd, it implies that one sd increase in $NeighAttitudesIPV_{-i}$ causes a 0.36 sd increase in the likelihood of a woman’s justification of IPV. The effect continues to be statistically significant at 1% level of significance.

[Table 3 here]

5 Robustness

5.1 Falsification analysis

Our baseline results reveal a large positive and statistically significant effect of average neighbourhood attitudes of women towards IPV on a woman's i 's attitudes about IPV. So far, our neighbourhoods consist of all households living in the same cluster of households provided in NFHS-5. Now, we show that such a result is not obtained from considering any randomly assigned neighbourhood. With this test, we validate the strength of the neighbourhood attitudes about IPV on how impressionable a woman in that neighbourhood is by ruling out the presence of such effects within randomly generated neighbourhoods. Specifically, we randomize the neighbourhood clusters of each household while ensuring that the number of households assigned to each neighbourhood equals the average neighbourhood size in our baseline. Then we re-estimate our specification and repeat it a 100 times. We randomly assign a different neighbourhood to each household in each of the 100 replications.

We find no significant impact of a randomly assigned neighbourhood's attitudes regarding IPV on a woman's own attitudes 93% of the times measured at 5% level significance. To be precise, we are unable to reject the null that the effect of neighbourhood attitudes is equal to zero 7 out of 100 times. Figure 3 plots the t-statistics obtained corresponding to the coefficient of neighbourhood attitudes from each of the 100 replications. This falsification test demonstrates that repeated estimations with random assignments of neighbourhood clusters do not yield statistically significant results similar to our baseline model, which defines neighbourhoods based on geographical proximity as defined in the NFHS.

Figure 3: Falsification analysis using random neighbourhoods

Notes: The figure illustrates the t-statistics of the effect of neighbourhood attitudes justifying IPV on own attitudes. These test statistics are obtained from 100 iterations of our preferred two-stage least squares estimation, but using randomly assigned neighbourhoods for women.

5.2 Additional sample restrictions

Respondent as the head, wife of head or daughter-in-law of head: To further support the identification of our analysis through our IV, we consider only those households where the respondent is either the head, wife of the head, or the daughter-in-law of the head of the household. We do this to restrict the sample to only such households where the respondent is living with her parents-in-law and not her own parents. This reduces the sample to 47,154 observations. We present the results based on our preferred specification with woman, spousal,

household, neighbourhood level characteristics and district fixed effects in Column (1) of Table 4. In line with the main result, it shows that a one pp increase in the neighbourhood average of women who justify IPV leads to a 0.53 pp increase in the likelihood of a woman’s justification attitude towards IPV.

No daughters living away: As an additional check to support the validity of our IV, we restrict our sample to families who do not have any daughters living away to exclude any case who may have married daughters living in the same neighbourhood. This brings our sample to 41,057 households. Column (2) of Table 4 presents the result based on this restriction. We find that a one pp increase in the neighbourhood average of women causes a 0.49 pp increase in the probability of a woman’s justification of IPV.

Large neighbourhoods: In our preferred sample, neighbourhood size ranges from 2 to 11 with an average of 6.2 households. To minimise the error in the measurement of neighbourhood attitudes about IPV, we restrict our sample to omit neighbourhoods with fewer than six households in a neighbourhood. This reduces our sample to 39,495 observations. Column (3) of Table 4 shows that our result is robust to this sample restriction as well.

[Table 4 here]

5.3 Alternative outcome construction: Z-score

Following Erten and Keskin (2018), we also create a z-score for each of the seven cases pertaining to IPV justification using the mean and standard deviation and then construct a continuous outcome variable using the sample averages of these z-scores. We denote this as $z - AttitudesIPV$. Table 5 presents the results. We note that a one pp point increase in the neighbourhood average of women leads to a 0.58 sd units increase in $z - AttitudesIPV$. By construction, $z - AttitudesIPV$ assigns equal weight to each attitude variable regardless of gravity of reason to justify IPV. However, the gravity of reasons to justify IPV may vary considerably across these variables. Therefore, following Anderson (2008), we introduce an additional index, *Inversely – Weighted – z – AttitudesIPV*, which captures the gravity of reasons to justify IPV by assigning the inverse of the covariance matrix of the z-scores of these attitude variables. This index assigns a higher (lower) weight to reasons that are observed less (more) frequently in our analytical sample. Column (2) of Table 5 shows that a one pp point increase in the neighbourhood average of women leads to a 0.59 sd units increase in *Inversely – Weighted – z – AttitudesIPV*.

[Table 5 here]

6 Heterogeneity analysis

To examine whether our main results vary across different subsamples, we dissect our analytical sample in several interesting ways and estimate the effect of neighbourhood attitudes about IPV on own attitudes using our preferred specification, including women, spousal, household level and neighbourhood characteristics, as well as district fixed effects. This offers us deeper insights into the circumstances under which women are more susceptible to considering IPV as acceptable behaviour. We examine the heterogeneous effects by women’s characteristics and certain household-level characteristics. Women’s characteristics include - *education, employment, ownership of assets, access to media, ownership of mobile phone, and gender composition of her kids*; and household characteristics include - *wealth index, household size, social group, religion and area of residence*. We present the results in Tables 6 and 7.

6.1 Woman-level characteristics

By woman’s education: Given the important role that education plays in empowering a woman (Hanmer and Klugman, 2016) it is worthwhile to evaluate whether more education can potentially make her less impressionable by peers and societal pressures. We divide our sample into two groups of women, specifically, *more educated* (years of education is more than the median years in the sample) and *less educated* (years of education less than or equal to the median years in the sample). Columns (1) and (2) in Table 6 reports our estimates. As expected, we find that more educated women are less influenced by their peers’ attitudes compared to less educated women. Specifically, a one percentage point increase in average neighbourhood attitudes justifying IPV leads to a 0.32 pp increase in own attitudes justifying IPV for a more educated woman whereas the effect is much larger at 0.67 pp for a less educated woman.

By woman’s employment status: Complementing education, a woman’s labor force participation is also documented as a way to promote her empowerment and well-being (Lenze and Klasen, 2017). Sen (1999) documents the *capability approach* wherein work constitutes an integral part of a woman’s well being and empowerment. Thus, we evaluate heterogeneous effects of neighbourhood attitudes on one’s own attitudes justifying IPV by a woman’s current employment status. We divide our sample into groups of women who are currently working and those who are not working. Columns (3) and (4) in Table 6 report our estimates. We find that women who are currently working are less impressionable by their peers. Specifically, a one pp increase in average neighbourhood attitudes justifying IPV leads to a 0.51 pp increase in own attitudes justifying IPV for a working woman whereas the impact is 0.54 pp for a woman who is not working currently. These findings align with the idea that more empowerment and agency

can indeed make women less impressionable by peers.

By woman's asset ownership: Another critical factor recognized to shape a woman's empowerment and agency is her possession of physical assets ([Amir-ud Din et al., 2023](#); [Mishra and Sam, 2016](#)), namely, a house or land. We divide our sample again into two groups of women: one, who do not own any house or land either solely or jointly with their husband and two, who have either sole or joint ownership of a house or land. Columns (5) and (6) in [Table 6](#) report our estimates. In line with our earlier findings, we estimate that a one pp increase in average neighbourhood attitudes justifying IPV leads to a 0.4 pp increase in own attitudes justifying IPV for a woman having asset ownership, whereas the impact is 0.58 pp for a woman who does not.

By woman's access to mobile and media: Following the result on physical asset ownership, we were intrigued to explore whether the access to mobile phones and exposure to some type of media (television, radio or newspaper) can impact the degree to which peers' can influence a woman. Interestingly, there can be two contradictory effects in this case. Firstly, access to mobile phones and exposure to media can potentially lead to more networking effects, which might mean more peer influences. On the other hand, access to mobile phones and exposure to media services are also correlated with more education, empowerment, and agency of a woman, and they also give her access to more qualified information. Columns (7)-(10) in [Table 6](#) presents these results. Once again, we find compelling evidence supporting the empowerment channel. Women who own a mobile phone and who have access to media are seen to be less influenced by their peers' attitudes as compared to those who do not have mobiles and are not exposed to media. Specifically, we find that for women owning a mobile, a one pp increase in average neighbourhood attitudes justifying IPV leads to a 0.48 pp increase in own attitudes justifying IPV whereas the impact is 0.59 pp for women who do not own mobile phones. Furthermore, we find that for women exposed to the media, a one pp increase in average neighbourhood attitudes justifying IPV leads to a 0.47 pp increase in own attitudes justifying IPV whereas the impact is 0.56 pp for women who are not exposed to the media.

By gender composition of kids: Son preference is a pressing social concern in the Indian context with well-established linkages between the gender composition of children and a woman's bargaining position in her marriage, her exposure to IPV and also female guilt ([Javed and Mughal, 2019](#); [Weitzman, 2020](#)). As such, we believe it is of particular importance to evaluate whether there is any difference in the degree of impressionability of a woman who has more sons than daughters and vice versa. Columns (11) and (12) in [6](#) report our estimates. We find that a one pp increase in average neighbourhood attitudes justifying IPV leads to a 0.34 pp increase

in own attitudes justifying IPV amongst women who have more sons than daughters, whereas the impact is 0.63 pp for women who have more daughters. We suggest that these findings align with established literature on female guilt (Das Gupta et al., 2003), wherein women who do not bear a sufficient number of sons or have more daughters tend to feel a sense of responsibility. Consequently, they may strive to be more compliant with their spouse or in-laws and readily accept or internalize various regressive and gendered attitudes.

[Table 6 here]

6.2 Household-level characteristics

By Wealth Index: In our sample, we have households belonging to different wealth categories. Therefore, it is interesting to see if there is any substantial difference between women belonging to poor versus non-poor households. We define a household as “Poor” if the wealth index of that household is below the median wealth index. Households whose wealth index is higher than the median are categorized as “Non-Poor”. Our primary goal is to evaluate whether women belonging to poor households are more impressionable than women belonging to non-poor households. We find evidence in support of that (Columns (3) and (4) in Table 7) and show that a one percentage point increase in average neighbourhood attitudes justifying IPV leads to a 0.54 pp (0.49 pp) increase in own attitudes justifying IPV for a woman belonging to poor household (non-poor household).

By Household Size: We also document the differential effect of neighbourhood attitudes justifying IPV on own attitudes of a woman when we segregate the sample based on household size. We divide the sample into two parts - women belonging to households of size higher than the median household size in our sample and those belonging to households smaller than the median size. Columns (1) and (2) of table 7 shows that one percentage point increase in average neighbourhood attitudes justifying IPV leads to a 0.49 pp (0.57 pp) increase in own attitudes justifying IPV for a woman belonging to a smaller household (larger household). Thus, we note that women belonging to households of bigger size are more likely to be affected by the attitudes of their neighbours than women residing in smaller-sized households. Evidence suggests that larger household size is often negatively associated with work status, decision-making and self-esteem (Soharwardi and Ahmad, 2020). A higher number of household members, often indicative of big joint family setups where decisions are majorly taken by older members, is also documented to have a negative impact on women empowerment (Akram, 2018; Sridevi, 2005). Our results align with these studies that women belonging to larger households appear more impressionable, plausibly due to a loss of agency and empowerment.

By Religion: We also divide the sample in terms of the religion of the women. In our context, religion is of particular significance owing to the diverse belief structures and practices associated with each of them. We segregate women into three categories, Hindu and Muslim being the most popular in India, and aggregate all other women into a third category as “Others”. Columns (5), (6) and (7) of Table 7 report that women belonging to Muslim households are most affected by their neighbours’ attitudes, followed by the Hindus and then “Others”. We find that a one pp increase in average neighbourhood attitudes justifying IPV leads to a 0.96 pp, 0.53 pp and 0.45 pp increase in own attitudes justifying IPV for a woman belonging to Muslim, Hindu and Other religions, respectively. Extant literature documents that Muslim women in India are less empowered and enjoy lower agency (Samu, 2018) relative to other communities. Our findings corroborate the fact that being a woman and belonging to a community that is economically and educationally backward plausibly makes this group more impressionable.

By Social Group: Next, we slice the sample by castes. More specifically, we divide the sample into four caste categories - women belonging to the Upper Caste (UC), Other Backward Class (OBC), Scheduled Castes (SC) and Scheduled Tribes (ST). We find a positive and significant impact of neighbourhood attitudes justifying IPV on own attitudes justifying IPV across all the castes. The effect appears to be higher for SC and OBC in comparison with UC and ST as reported in Columns (8)-(11) in Table 7. A one pp increase in average neighbourhood attitudes justifying IPV leads to a 0.46 pp (0.54 pp) increase in own attitudes justifying IPV for a woman belonging to OBC (SC). Furthermore, a one pp increase in average neighbourhood attitudes justifying IPV leads to a 0.31 pp (0.34 pp) increase in own attitudes justifying IPV for a woman belonging to UC (ST).

By Residence: Finally, we segregate the households according to their place of residence defined by urban and rural, and interestingly, we find suggestive evidence that women in urban areas are more likely to be influenced by their neighbours than their rural counterparts. Columns (12) and (13) of Table 7, show that a one pp increase in average neighbourhood attitudes justifying IPV leads to a 0.62 pp (0.50 pp) increase in own attitudes justifying IPV for a woman belonging to a household in urban area (rural area).

[Table 7 here]

7 Potential mechanism

Throughout this paper, we show robust evidence that average neighbouring women’s attitudes about IPV positively affect a woman’s own attitudes towards IPV. In other words, if, on

average, women in the neighbourhood of woman i justify IPV, it results in the acceptability of IPV by woman i . Here, we study the potential mechanism through which neighbourhood women’s attitudes about IPV would affect a woman’s own attitudes towards IPV. Existing literature establishes that attitudes are a strong predictor of the actual incidence of violence (Mookerjee et al., 2021; Jewkes, 2002; Sambisa et al., 2010). As such, we posit that neighbouring women’s attitudes towards IPV affect women i ’s own views about IPV through the actual incidence of IPV in the neighbourhood. Naturally, if attitudes alter behaviour as documented in the literature, neighbouring women’s acceptability of IPV would affect the incidence of IPV at the neighbourhood level and, in turn, affect a woman’s own acceptability of violence. We consider physical domestic violence as our measure for the incidence of IPV since it is more likely to be visible than emotional or sexual domestic violence. Specifically, we define physical domestic violence (PDV) using the information in NFHS - 5 about whether the husband in the house has ever done any of the following to their wife: *push, shake, or throw something at them; slap, punch with his fist or with something that could hurt them; kick, or drag; strangle, or burn on purpose; twist their arm or pull their hair*. Subsequently, we define PDV in household i , PDV_i as 1 if the respondent has ever been exposed to any of the above physical acts of violence, and 0 otherwise. We then construct our neighbourhood physical domestic violence variable, $NeighPDV_{-i}$, by taking the average PDV occurring in all households that belong to the same cluster, except household i in the cluster.

To explore this channel, we first estimate the association between average neighbourhood attitudes about IPV and the actual incidence of average neighbourhood physical domestic violence. As a second step, we use the predicted average neighbourhood physical domestic violence as a predictor for the women’s own attitudes about IPV.

$$NeighPDV_{-i} = \eta_0 + \eta_1 NeighAttitudesIPV_{-i} + \eta_2 \mathbb{X}_i + \eta_3 \bar{N}_{-i} + \lambda_d + \epsilon_i \quad (4)$$

$$AttitudesIPV_i = \gamma_0 + \gamma_1 \widehat{NeighPDV}_{-i} + \gamma_2 \mathbb{X}_i + \gamma_3 \bar{N}_{-i} + \lambda_d + \epsilon_i \quad (5)$$

Table 8 presents the results. In column (1), we find that average neighbourhood attitudes about IPV has a statistically significant positive association with the actual incidence of average neighbourhood PDV. Specifically, one pp increase in the neighbourhood average of women who justify IPV increases the neighbourhood average of women exposed to PDV by 0.19 pp. Following the methodology followed in Bose et al. (2020), we then generate the *predicted* average neighbourhood PDV and use the predicted $NeighPDV_{-i}$ to explain the change in $AttitudesIPV_i$. Column (2) shows that women residing in neighbourhoods that have a higher

prevalence of PDV due to justifying attitudes towards IPV are more likely to justify IPV than women residing in neighbourhoods that have a lower prevalence of physical domestic violence. While we acknowledge that these effects are not causal, this provides suggestive evidence that neighbouring women’s acceptability of IPV translates into the incidence of IPV and, through this channel, potentially leads to an increase in an individual woman’s acceptability of IPV.

[Table 8 here]

8 Conclusion

Our paper adds to two strands of literature. Firstly, the one dealing with the attitudes towards physical intimate partner violence (IPV) and the various theories that are well documented to explain the existence of tolerant attitudes. Secondly, we add to the literature on peer influences and establish the role of social networks and peers’ attitudes on one’s own acceptability of IPV. Our work builds on the premise of the *normalization theory*, which suggests that women are conditioned to justify male violence within an intimate relationship as normal and is predominantly motivated by the *social learning theory* that says that individuals learn and adopt behaviours they observe among their peers (Okenwa-Emegwa et al., 2016; Bandura and Walters, 1963; Bandura, 1972). Given that social norms and gender roles in majorly patriarchal societies are learnt within social groups, it is crucial to estimate the magnitude of peer influences in this regard. To this end, we empirically evaluate the causal impact of a woman’s peers’ attitudes justifying IPV on her own attitudes. The main empirical challenge in identifying a causal impact arises from potential endogeneity stemming from the presence of group-level unobservables that may affect both the individual and her neighbours; secondly, models of peer influences suffer from identification issues attributable to reverse causality wherein it is difficult to disentangle whether an individual’s decision is the cause or the effect of her peers’ actions. Furthermore, potential self-selection into neighbourhoods could also bias traditional estimates. To address such empirical concerns, we utilize exogenous variation in neighbouring women’s exposure to their parental IPV as an instrument for average neighbourhood attitudes justifying IPV. Our findings suggest that a one pp (one sd) increase in a woman’s average neighbourhood beliefs justifying IPV leads to a 0.53 pp (0.36 sd) increase in the likelihood that the woman herself will justify IPV. We find that such peer influences matter more for less educated and unemployed women, women who do not have access to media or phones, those who do not own any physical assets and those bearing more daughters than sons.

While we find consistently robust evidence of a causal effect of neighbouring women’s at-

attitudes about IPV as being justified on an individual woman's attitudes thereof, giving us an indication of the degree to which women are affected by their social peers, the findings of this paper are best understood in the light of its limitations. First, our analysis does not consider men's attitudes regarding IPV as being justified (or not), although men's similar attitudes are also important in this regard when we consider intra-marital violence. While we can find suggestive evidence of neighbouring men's attitudes about IPV on how impressionable men are or cross-gender effects of neighbourhood attitudes, our instrument that utilizes exogenous variation in parental domestic violence would not satisfy the exclusion restriction in the case for men. This is because, while there is evidence of women, on average, migrating for marriage, this is not true for men in our setting. [Fulford et al. \(2013\)](#) provides a detailed overview of the pervasiveness and causes of marriage migration of women in India. Anecdotally, until the age of 16, male and female migration is predominantly driven by family movements and is almost identical, after which, in both rural and urban areas, female migration increases rapidly. Across India, three-quarters of women have migrated away from their place of birth by the age of 21, almost all on account of marriage, whereas only 15% of Indian men ever move away from their place of birth.⁹ As such, men continue to reside in close proximity to their parents even after marriage unless the men migrate for employment. In this scenario, neighbouring men's exposure to their parental domestic violence would not serve as a valid IV and thus would not provide us causal estimates. Second, access to secondary data limits the extent to which all factors affecting attitudes can be considered for the analysis. We are able only to include beliefs about women's normative roles within the households and are unable to account for other important factors, such as women's labour force participation, education, and husband's alcohol, among others, that may play a direct role in defining attitudes towards IPV. Questions about whether wife-beating is justified under situations contingent upon the wife's employment, education level or the husband's alcohol consumption are not explicitly asked in the NFHS. While we control for these variables as independent variables in our analysis, we are unable to shed further light upon the degree to which these would define neighbouring attitudes towards IPV. Third, given that our analysis is based on the face-to-face interviews in NFHS data, the responses particularly related to attitudes about IPV or the incidence of IPV may suffer from measurement error and, as such, may exhibit systematic misreporting of attitudes justifying IPV as opposed to self-administered questionnaires. Often, such variables, considering attitudes, suffer from social desirability bias ([Dhar et al., 2022](#)), and we cannot speak to the extent to which the responses are guided by the need to conform to a socially desirable answer. Fourth, we are limited to providing suggestive evidence of the potential mechanism of our impacts.

That said, the paper provides new insights into social effects/network/neighbourhood effects of attitudes about IPV and records the important relationship between the degree of influence of a woman’s peers on her own attitudes regarding IPV. The pattern that emerges in our findings underscores the close association between a woman’s agency, empowerment and how impressionable she is by her peers. As such, to arrest the perpetration of gender-biased social norms, our results reinforce the importance of formulation and enhanced implementation of policies targeted towards women’s empowerment through improvement in female school enrolment, continuing education, labour force participation and more fair access to resources.

Notes

¹The DHS surveys for all countries are available at <https://dhsprogram.com/>.

²See IIPS and ICF for more details on the survey methodology.

³Specifically, we drop missing observations in the outcome variable (345), age of the household head (6), neighbourhood averages of women who justify IPV (10), exposed to parental IPV (358) and normal body mass index (BMI) (80).

⁴Oster (2019) also suggests that if a coefficient is stable after the inclusion of the observed controls, this can be taken as a sign that the omitted variable bias is limited.

⁵Our measure of wealth is based on the wealth index provided by DHS, which is a standardized measure of household economic status in a given survey. The DHS divides households into the poorest, poorest, middle, richer, and richest.

⁶For the robustness of our baseline results, we also use IV-Probit estimation.

⁷Section 5 presents the results for this robustness check.

⁸The effect of a one sd increase in $NeighParentsIPV_{-i}$ is equal to $\frac{(Coefficient) * (StandardDeviationofNeighParentsIPV_{-i})}{(StandardDeviationofAttitudesIPV_i)}$.

The standard deviations of $NeighParentsIPV_{-i}$ and $AttitudesIPV_i$ are available in Table 1.

⁹These statistics are based on the Indian National Sample Surveys and the IHDS data.

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Table 1: Descriptive Statistics

Variable	Mean	SD	Min	Max
Own Attitudes towards IPV (AttitudesIPV)				
Justifies IPV: Yes	0.44	0.50	0	1
Justifies IPV: No	0.56	0.50	0	1
Neighbourhood Attitudes towards IPV (NeighAttitudeIPV)	0.44	0.34	0	1
Neighbourhood Women Parents' Violence (NeighParentIPV)	0.19	0.26	0	1
Woman's own characteristics				
Age (in years)	33.86	7.74	15	49
Age at Cohabitation (in years)	18.96	3.98	0	45
Years of Completed Education	6.50	5.13	0	20
Currently Working				
Yes	0.30	0.46	0	1
No	0.70	0.46	0	1
House/Land Ownership				
Yes	0.51	0.50	0	1
No	0.49	0.50	0	1
Bank Account				
Yes	0.81	0.40	0	1
No	0.19	0.40	0	1
Mobile Ownership				
Yes	0.55	0.50	0	1
No	0.45	0.50	0	1
Media Exposure				
Yes	0.53	0.50	0	1
No	0.47	0.50	0	1
Normal BMI				
Yes	0.41	0.49	0	1
No	0.57	0.50	0	1
Missing	0.02	0.14	0	1
Difference in number of sons and daughters	0.08	1.45	-8	10
Parents' Violence				
Yes	0.16	0.36	0	1
No	0.68	0.47	0	1
Missing	0.16	0.37	0	1
Duration of residence in current location (in years)	15.54	12.00	0	50
Husband's characteristics				
Age (in years)	38.53	8.17	15	54
Age at Cohabitation (in years)	23.49	4.79	0	53
Years of Completed Education	7.85	4.89	0	20
Currently Working				
Yes	0.91	0.29	0	1
No	0.09	0.29	0	1
House/Land Ownership				
Yes	0.82	0.39	0	1
No	0.18	0.39	0	1
Media Exposure				
Yes	0.57	0.49	0	1
No	0.43	0.49	0	1
Household characteristics				
Religion				
Hindu	0.76	0.43	0	1
Muslim	0.12	0.32	0	1
Christian	0.07	0.26	0	1
Other	0.05	0.22	0	1
Social Group				
Scheduled Caste (SC)	0.19	0.39	0	1
Scheduled Tribe (ST)	0.20	0.40	0	1
Other Backward Class (OBC)	0.38	0.49	0	1
Upper Caste (UC)	0.17	0.38	0	1
Missing	0.06	0.23	0	1
Wealth Category				
Poor	0.44	0.50	0	1
Rich	0.56	0.50	0	1
Male Headed Houshold				
Yes	0.93	0.25	0	1
No	0.07	0.25	0	1
Household head's age (in years)	45.42	12.73	14	95
Household Size	4.89	1.72	2	20
Residence Status				
Rural	0.75	0.43	0	1
Urban	0.25	0.43	0	1
<i>Observations</i>			48155	

Table 2: First stage analysis: Estimates of the effect of woman’s neighbourhood exposure to parental IPV on neighbourhood attitudes towards IPV.

	Neighbourhood Attitudes towards IPV			
	(1)	(2)	(3)	(4)
Neighbourhood Exposure to Parental IPV	0.381***	0.317***	0.278***	0.133***
	(0.012)	(0.011)	(0.011)	(0.011)
Observations	48,155	48,155	48,155	48,155
Woman’s Characteristics	No	Yes	Yes	Yes
Spousal Characteristics	No	Yes	Yes	Yes
Household Characteristics	No	Yes	Yes	Yes
Neighbourhood Characteristics	No	No	Yes	Yes
District FE	No	No	No	Yes
Contextual Effects	No	No	Yes	Yes
First Stage F Statistic	945.17	816.34	601.57	152.19
Kleibergen-Paap rK-LM Statistic	684.89	697.76	534.42	148.14
R-squared	0.106	0.133	0.048	0.059

Notes: Estimation via OLS regression analysis. The outcome variable is average neighbourhood attitudes towards IPV. Column (1) has no controls and no FE. Column (2) controls for woman, spousal and household level characteristics. Columns (3) and (4) subsequently includes neighbourhood characteristics and district fixed effects, respectively. Woman-level controls include woman’s age, age at cohabitation, education, current work status, house/land ownership, bank account, mobile phone, exposure to mass-media, indicator for normal BMI, gender gap between children, exposed to parental IPV and the years of residence in the current location. Spousal controls include age, age at cohabitation, education, current work status, house/land ownership, and media exposure. Household level controls include indicators for religion, social group, wealth category, whether the household is male-headed, age of the head, household size and indicator for the area of residence. Neighbourhood characteristics include the cluster mean of women, husbands and household characteristics. Standard errors (in parentheses) are clustered at the neighbourhood level. ***, **, and * represent significance at 1%, 5% and 10%, respectively.

Table 3: OLS and IV analysis: Estimates of the effect of woman’s neighbourhood attitudes towards IPV on her own attitudes towards IPV.

	Woman’s Own Attitudes towards IPV							
	OLS				IV-TSLS			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Neighbourhood Attitudes towards IPV	0.662***	0.620***	0.606***	0.411***	0.914***	0.778***	0.771***	0.525***
	(0.006)	(0.006)	(0.007)	(0.010)	(0.010)	(0.020)	(0.023)	(0.055)
Observations	48,155	48,155	48,155	48,155	48,155	48,155	48,155	48,155
Woman’s Characteristics	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Spousal Characteristics	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Household Characteristics	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Neighbourhood Characteristics	No	No	Yes	Yes	No	No	Yes	Yes
District FE	No	No	No	Yes	No	No	No	Yes
Contextual Effects	No	No	Yes	Yes	No	No	Yes	Yes
First Stage F Statistic					945.17	816.34	601.57	152.19
Kleibergen-Paap rK-LM Statistic					684.89	697.76	534.42	148.14

Notes: Estimation in columns (1)-(4) and (5)-(8) via OLS and IV-TSLS regression analysis, respectively. The outcome variable is woman’s attitudes towards IPV. It is a binary variable that takes a value one if a woman justifies IPV. Columns (1) and (5) have no controls and no FE. Columns (2) and (6) control for woman, spousal and household level characteristics. Columns (3) and (7) further control for neighbourhood characteristics. Columns (4) and (8) subsequently include district fixed effects. Woman-level controls include woman’s age, age at cohabitation, education, current work status, house/land ownership, bank account, mobile phone, exposure to mass-media, indicator for normal BMI, gender gap between children, exposed to parental IPV and the years of residence in the current location. Spousal controls include age, age at cohabitation, education, current work status, house/land ownership, and media exposure. Household level controls include indicators for religion, social group, wealth category, whether the household is male-headed, age of the head, household size and indicator for the area of residence. Neighbourhood characteristics include the cluster mean of women, husbands and household characteristics. Standard errors (in parentheses) are clustered at the neighbourhood level. ***, **, and * represent significance at 1%, 5% and 10%, respectively.

Table 4: Robustness analysis - sample restrictions: IV estimates of the effect of woman’s neighbourhood attitudes towards IPV on her own attitudes towards IPV.

		Woman’s Own Attitudes towards IPV			
		Head, Daughter-in-Law Head	Spouse or of	No Daughters Living Away	Large Neighbourhoods
		(1)	(2)	(3)	
Neighbourhood	Attitudes to- wards IPV	0.526*** (0.056)	0.490*** (0.063)	0.536*** (0.059)	
	Observations	47,154	41,057	39,495	
	Woman’s Characteristics	Yes	Yes	Yes	
	Spousal Characteristics	Yes	Yes	Yes	
	Household Characteristics	Yes	Yes	Yes	
	Neighbourhood Characteristics	Yes	Yes	Yes	
	District FE	Yes	Yes	Yes	
	Contextual Effects	Yes	Yes	Yes	
	First Stage F Statistic	149.23	137.43	115.6	
	Kleibergen-Paap rK-LM Statistic	145.38	134.31	112.75	

Notes: Estimation via IV-TSLS regression analysis. Column (1) restricts the sample to respondents who are the head, spouse or daughter-in-law of the head. In separate analysis, Columns (2) and (3) restrict the sample to households where no daughter is living away and households residing in neighbourhoods with at least six households in the neighbourhood, respectively. The outcome variable is woman’s attitudes towards IPV. It is a binary variable that takes a value one if a woman justifies IPV. All the columns include woman, spousal and household level characteristics, neighbourhood characteristics and district fixed effects. Woman-level controls include woman’s age, age at cohabitation, education, current work status, house/land ownership, bank account, mobile phone, exposure to mass-media, indicator for normal BMI, gender gap between children, exposed to parental IPV and the years of residence in the current location. Spousal controls include age, age at cohabitation, education, current work status, house/land ownership, and media exposure. Household level controls include indicators for religion, social group, wealth category, whether the household is male-headed, age of the head, household size and indicator for the area of residence. Neighbourhood characteristics include the cluster mean of women, husbands and household characteristics. Standard errors (in parentheses) are clustered at the neighbourhood level. ***, **, and * represent significance at 1%, 5% and 10%, respectively.

Table 5: Robustness analysis - alternative outcome variable: IV estimates of the effect of woman's neighbourhood attitudes towards IPV on her own attitudes towards IPV.

	Neighbourhood Exposure PDV	Woman's Own Attitudes towards IPV
	(1)	(2)
Neighbourhood Attitudes towards IPV	0.186*** (0.009)	
Predicted Neighbourhood Exposure to IPV		2.216*** (0.052)
Observations	48,155	48,155
Woman's Characteristics	Yes	Yes
Spousal Characteristics	Yes	Yes
Household Characteristics	Yes	Yes
Neighbourhood Characteristics	Yes	Yes
District FE	Yes	Yes
Contextual Effects	Yes	Yes

Notes: Estimation via OLS analysis. In column (1), the outcome variable is average neighbourhood attitudes about IPV. In column (2), the outcome variable is predicted average neighbourhood attitudes about IPV estimated through regression analysis in column (1). Both the columns include woman, spousal and household level characteristics, neighbourhood characteristics and district fixed effects. Woman-level controls include woman's age, age at cohabitation, education, current work status, house/land ownership, bank account, mobile phone, exposure to mass-media, indicator for normal BMI, gender gap between children, exposed to parental IPV and the years of residence in the current location. Spousal controls include age, age at cohabitation, education, current work status, house/land ownership, and media exposure. Household level controls include indicators for religion, social group, wealth category, whether the household is male-headed, age of the head, household size and indicator for the area of residence. Neighbourhood characteristics include the cluster mean of women, husbands and household characteristics. Standard errors (in parentheses) are clustered at the neighbourhood level. ***, **, and * represent significance at 1%, 5% and 10%, respectively.

Table 6: Heterogeneity analysis - by woman characteristics

	Woman's Own Attitudes towards IPV											
	Education		Employment Status		Ownership of Assets		Access to Mobile		Access to Media		Gender Composition of Children	
	Smaller	Larger	Yes	No	Yes	No	Yes	No	Yes	No	Sons>Daughters	Sons≤Daughters
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Neighbourhood Attitudes towards IPV	0.323***	0.671***	0.509***	0.542***	0.402***	0.578***	0.480***	0.593***	0.472***	0.563***	0.338***	0.632***
	(0.106)	(0.077)	(0.108)	(0.071)	(0.111)	(0.076)	(0.089)	(0.083)	(0.104)	(0.075)	(0.105)	(0.074)
Observations	23,464	24,691	14,521	33,634	24,716	23,439	26,341	21,814	25,310	22,845	17,619	30,536
Woman's Characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Spousal Characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Household Characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Neighbourhood Characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Contextual Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
First Stage F Statistic	87.09	125.56	93.49	131.14	65.83	132.75	101.75	115.39	72.73	128.01	106.17	127.97
Kleibergen-Paap rK-LM Statistic	200.66	292.77	179.4	351.04	179.05	316.55	237.54	273.36	180.48	316.98	193.3	311.65

Notes: Estimation via IV-TSLS regression analysis. The outcome variable is woman's attitudes towards IPV. It is a binary variable that takes a value one if a woman justifies IPV. The sample is cut by women's years of education - higher than median years of education (7 years) in column (1) and less than or equal to median years of education (7 years) in column (2); by employment status in columns (3) and (4); by ownership of house or land in columns (5) and (6); by access to mobile in columns (7) and (8); by exposure to television, radio or newspaper in columns (9) and (10); and by gender composition of kids - higher sons compared to daughters in column (11) and less than or equal number of sons compared to daughters in column (12). All the columns include woman, spousal and household level characteristics, neighbourhood characteristics and district fixed effects. Woman-level controls include woman's age, age at cohabitation, education, current work status, house/land ownership, bank account, mobile phone, exposure to mass-media, indicator for normal BMI, gender gap between children, exposed to parental IPV and the years of residence in the current location. Spousal controls include age, age at cohabitation, education, current work status, house/land ownership, and media exposure. Household level controls include indicators for religion, social group, wealth category, whether the household is male-headed, age of the head, household size and indicator for the area of residence. Neighbourhood characteristics include the cluster mean of women, husbands and household characteristics. Women characteristics measured as binary variables are omitted in several subsample analysis. Specifically, employment status is omitted in columns (3) and (4), asset ownership in columns (5) and (6), access to mobile in columns (7) and (8), and media exposure in columns (9) and (10). Standard errors (in parentheses) are clustered at the neighbourhood level. ***, **, and * represent significance at 1%, 5% and 10%, respectively.

Table 7: Heterogeneity analysis - by household characteristics

		Woman's Own Attitudes towards IPV												
		Household Size		Wealth		Religion			Social Group				Residence	
		Lower	Higher	Non-Poor	Poor	Hindu	Muslim	Others	UC	OBC	SC	ST	Urban	Rural
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Neighbourhood Attitudes towards IPV		0.495***	0.569***	0.489***	0.541***	0.453***	0.956***	0.528***	0.313**	0.459***	0.564***	0.340**	0.620***	0.504***
		(0.070)	(0.117)	(0.096)	(0.074)	(0.073)	(0.131)	(0.152)	(0.152)	(0.117)	(0.154)	(0.132)	(0.117)	(0.063)
Observations		33,595	14,560	26,924	21,231	36,421	5,707	6,027	7,527	18,243	9,084	9,756	11,897	36,258
Woman's Characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Spousal Characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Household Characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Neighbourhood Characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Contextual Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
First Stage F Statistic		139.48	72.9	74.83	123.11	108.55	33.72	23.7	29.08	61.4	51.81	46.47	32.66	119.99
Kleibergen-Paap rK-LM Statistic		365.2	142.15	197.87	321.42	330.99	105.29	65.56	82.51	143.07	90.06	127.4	106.39	397.2

Notes: Estimation via IV-TSLS regression analysis. The outcome variable is woman's attitudes towards IPV. It is a binary variable that takes a value one if a woman justifies IPV. The sample is cut by number of household members - less than or equal to median number (5) in column (1) and higher than median number (5) in column (2); by wealth in columns (3) and (4); by religion in columns (5) to (7); by social group in columns (8) to (11); and by residence in columns (12) and (13). All the columns include woman, spousal and household level characteristics, neighbourhood characteristics and district fixed effects. Woman-level controls include woman's age, age at cohabitation, education, current work status, house/land ownership, bank account, mobile phone, exposure to mass-media, indicator for normal BMI, gender gap between children, exposed to parental IPV and the years of residence in the current location. Spousal controls include age, age at cohabitation, education, current work status, house/land ownership, and media exposure. Household level controls include indicators for religion, social group, wealth category, whether the household is male-headed, age of the head, household size and indicator for the area of residence. Neighbourhood characteristics include the cluster mean of women, husbands and household characteristics. Household characteristics measured as categorical variables are omitted in several subsample analysis. Specifically, wealth is omitted in columns (3) and (4), religion in columns (5) to (7), social group in columns (8) to (11) and residence in columns (12) and (13). Standard errors (in parentheses) are clustered at the neighbourhood level. ***, **, and * represent significance at 1%, 5% and 10%, respectively.

Table 8: Mechanism: OLS estimate of the effect of woman’s neighbourhood attitudes towards IPV on women’s own attitudes through women’s neighbourhood exposure to PDV.

	Neighbourhood Exposure PDV	Woman’s Own Attitudes towards IPV
	(1)	(2)
Neighbourhood Attitudes towards IPV	0.186***	
	(0.009)	
Predicted Neighbourhood Exposure to IPV		2.216***
		(0.052)
Observations	48,155	48,155
Woman’s Characteristics	Yes	Yes
Spousal Characteristics	Yes	Yes
Household Characteristics	Yes	Yes
Neighbourhood Characteristics	Yes	Yes
District FE	Yes	Yes
Contextual Effects	Yes	Yes

Notes: Estimation via OLS analysis. In column (1), the outcome variable is average neighbourhood attitudes about IPV. In column (2), the outcome variable is predicted average neighbourhood attitudes about IPV estimated through regression analysis in column (1). Both the columns include woman, spousal and household level characteristics, neighbourhood characteristics and district fixed effects. Woman-level controls include woman’s age, age at cohabitation, education, current work status, house/land ownership, bank account, mobile phone, exposure to mass-media, indicator for normal BMI, gender gap between children, exposed to parental IPV and the years of residence in the current location. Spousal controls include age, age at cohabitation, education, current work status, house/land ownership, and media exposure. Household level controls include indicators for religion, social group, wealth category, whether the household is male-headed, age of the head, household size and indicator for the area of residence. Neighbourhood characteristics include the cluster mean of women, husbands and household characteristics. Standard errors (in parentheses) are clustered at the neighbourhood level. ***, **, and * represent significance at 1%, 5% and 10%, respectively.