Association Between Disabilities, Educational Attainment, Literacy, and Intimate Partner Violence: Findings from the Indian National Family Health Surveys

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Abstract
Intimate partner violence (IPV) is widespread across the Global South, including India, due to cultural and patriarchal norms that encourage and facilitate such behaviors. These include age at marriage, community- and individual-level encouragement of IPV, and limited access to education across the Global South, particularly for women. Despite this, little research has sought to disentangle the role that disabilities play in affecting women’s risk of IPV in India. The current study analyzes a sample of currently married women (N = 114,901) from the nationally representative 2015–2016 and 2019–2021 National Family Health Surveys (NFHS) to assess whether a relationship exists between these dimensions, while controlling for well-known IPV correlates, with physical IPV and controlling behaviors. Logistic regression analyses revealed that persons with cognitive/intellectual disabilities as well as blind respondents were more likely to experience physical IPV. Blind respondents were also more likely to experience controlling behavior. Further, findings indicate that those with no or some education were more likely to experience physical IPV relative to those with higher education. Findings from the current study demonstrate the need for IPV reduction policies to ensure that adequate accommodations are available to facilitate help-seeking behaviors among persons with disabilities. Tailored prevention policies are also needed which consider both context- and location-specific factors associated with risk.

Keywords Cognitive/intellectual disabilities · India · Intimate partner violence · Global South · Sensory differences

Intimate partner violence (IPV) is a global public health concern that can have deleterious consequences (World Health Organization [WHO], 2021). According to the WHO (2021), IPV includes physical abuse, sexual abuse, emotional abuse, or controlling behaviors perpetrated by a current or former intimate partner. Worldwide, it is estimated that 30% of women have experienced some form of physical or sexual violence by an intimate partner...
over the course of their lives (WHO, 2021). Research has shown that rates of IPV are variable cross-nationally but tend to be higher across the Global South when compared to the Global North (WHO, 2021). In addition, persons with disabilities experience gender-based violence at higher rates compared to persons without disabilities (Breiding & Armour, 2015; Chirwa et al., 2020). Together, the foregoing indicates that risk of IPV is not equally distributed globally or demographically and that some persons may be more vulnerable to abuse.

While there is a growing body of literature on IPV in India in general (e.g., Das & Roy, 2020; Dutta et al., 2016; Mondal & Paul, 2021a), another emerging area suggests that Indian women with disabilities may be more vulnerable to IPV (Riley et al., 2022). This is cause of concern given Human Rights Watch (2014) called attention to the institutionalization and forced treatment of Indian women with disabilities. Shortly thereafter, in 2016, the Rights of Persons with Disabilities Act was passed in India (Government of India Ministry of Social Justice and Empowerment, 2021), suggesting a growing recognition of the increased risk for this marginalized group. Yet, this media and policy attention might not have translated to the daily lives of Indian women with disabilities. The broader cultural context of India — where patriarchal norms dominate, a caste system informs the social hierarchy, but Indian women disclose IPV during interviews even in the presence of others (Ahmad et al., 2021; Begum et al., 2015; Rabel et al., 2014) — may shape the association between disabilities and IPV. Furthermore, persons with disabilities in the Global South may be disproportionately affected by isolation stemming from the COVID-19 pandemic, and consequently face increased risk of IPV (Constantino et al., 2020). Such persons may also face greater consequences due to the limited ability to seek help stemming from the intersection of COVID-19 restrictions and disability status. As we elaborate below, there is cross-national variability in the association between risk factors and IPV that is moderated by national norms and policies (Hayes, 2021; Jaquier et al., 2011). Consequently, sociostructural processes may affect the generalizability of these relationships. We assess if the association between disabilities and IPV indeed generalizes in the Indian context.

In addition, literature examining IPV risk in the Global South has failed to prioritize the role of education and literacy in terms of IPV risk, despite the elevated IPV risk associated with illiteracy (Nabaggala et al., 2021). Katiyar (2016) analysis notes that India has one of the highest rates of adult illiteracy relative to other nations. Recent estimates indicate that as many as 27% of Indian adults are not literate. When considering literacy across gender, findings are even more pronounced, with more than 35% of women not literate within India (Katiyar, 2016). This is particularly problematic, because literacy may exist at a unique nexus with cognitive and intellectual disabilities, and potentially lead to synergistic, elevated risks of IPV, potentially making such persons at greater risk of experiencing IPV and related consequences.

Relying on two waves of nationally representative data of Indian women, the current study has three main goals to better understand the association between disabilities, education, literacy, and IPV — both physical abuse and controlling behavior (N = 114,901). First, we examine if Blind respondents are more likely to experience IPV. Next, we consider the relationship between cognitive/intellectual disabilities and IPV by examining the intersection of educational status and literacy — reading is a skill developed by most children between the ages of four and seven. These women may be particularly vulnerable

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1 We capitalize blind when referring to the community or culture and use lower case blind when discussing people who are blind or have vision difficulties (see National Center on Disability and Journalism, n.d.).
as they may be able to function in daily living but nonetheless have particular impairments that enhance their risk. Finally, we consider this all within the broader context of India by controlling for previously identified correlates of IPV and also accounting for factors related to survey administration. That is, we consider interview interruption as this may (or may not) shape the respondent’s willingness to disclose abuse to a stranger (Hayes, 2021; Rabel et al., 2014). We also account for the language the survey was administered in. To date, India remains embattled over the national language (Choudhury & Sharma, 2021). We consider if those who complete the survey in a language other than Hindi or English are more vulnerable as it may represent a minoritized status.

India and IPV

Relative to other countries, IPV within the Indian context is particularly common (Ahmad et al., 2021; Kidman, 2017). For instance, Babu & Kar, (2009) reported that as many as 21.2% of women reported physical IPV, 32.4% experienced sexual IPV, and across the entire country, psychological IPV victimization was experienced by half of women. The ubiquity of IPV in India is echoed by more recent literature (Das & Roy, 2020; Dutta et al., 2016). Given the variability in the prevalence of these different forms of IPV, it is worthwhile to examine them separately to shed insight into unique correlates of each type of abuse.

There has been a growth in literature examining factors related to IPV and explaining such behavior within contemporary theoretical frameworks (Hayes, 2021; Voith, 2019; Wright et al., 2021). Despite this, extant frameworks employed in understanding IPV have been shown to be of limited applicability and/or need to be theoretically re-conceptualized among non-US samples (Hayes et al., 2021; VanderEnde et al., 2012). This may stem from the neglect to account for factors related to IPV that are unique to each nation’s context (Hayes, 2021).

One factor within the Indian context which contributes to IPV incidence is cultural norms relating to marriage. Extant scholarship across the Global South has shown that early marriage increases the risk of IPV (Hayes & Protas, 2021; Kidman, 2017). Within India, several marriage norms — such as the age disparities between spouses and arranged marriages — are often cited as increasing one’s vulnerability to IPV (Dutta et al., 2016; Kamat et al., 2013; Ler et al., 2020). Particularly, empirical works addressing marital factors in India have noted that women who are young at the time of marriage face significantly greater risk of IPV relative to others — a risk which is greatly exacerbated when marriage occurs prior to the woman turning 18 (Ahmad et al., 2021; Begum et al., 2015; Kimuna et al., 2013).

A related factor that contributes to IPV within the Indian context is India’s deeply patriarchal culture. Women in India are often subjected to greater spousal and familial scrutiny, inflexible customs, deference to spouses, and more rigid gender norms (Hayes & Franklin, 2017; Thomas & Rajan, 2020). Such patriarchal norms are often associated with women being subjected to controlling behavior from spouses and family members, including in-laws (Ragavan & Iyengar, 2020), often resulting in less agency regarding family planning, education, and employment, which are cited as contributing factors to IPV.

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2 The data analyzed in the current study did not capture if the respondent was in an arranged marriage.
(Hayes & Franklin, 2017; Wilson-Williams et al., 2008). We revisit the connection between education and IPV below.

Scholars have sought to unravel the extent to which support at the individual- or community-level for patriarchal behaviors — such as beliefs that violence toward women is excusable, condoned, or supported — influence IPV victimization. In this vein, Indian women who hold beliefs that such acts are condoned under certain circumstances have an elevated risk of IPV (Ler et al., 2020; Mukherjee & Joshi, 2021). For instance, Ler and colleagues (2020) noted that Indian women who express patriarchal beliefs were 29% more likely to experience IPV. Mukherjee and Joshi’s (2021) analysis also offers support for this and found that Indian women who justify their husband’s coercion or violence are more likely to experience IPV relative to others. Consequently, it is important to account for attitudes.

### Education and Disability

The relationship between education and risk of IPV has been mixed. While some scholars find a negative association between education and IPV (Koenig et al., 2003; Nabaggala et al., 2021), others report that increased educational attainment increases the risk of IPV (Fakir et al., 2016; Meeker et al., 2020; Rahman et al., 2011). For this latter finding, Weitzman’s (2014) analysis of men and women’s relative status within dyadic partnerships in India found that women with higher education relative to spouses suffered more frequent and severe violence when compared to women with less education than their spouses. Weitzman (2014) suggested such findings indicate women’s education as threatening patriarchal norms and eliciting retaliatory violence from husbands (Hayes & van Baak, 2022; Weitzman, 2014). Additionally, if women are marrying at younger ages, this often results in early motherhood, which affects opportunities and access to education, employment, and overall independence (Paul, 2019). Alternatively, education may offer protection against IPV by providing resources to begin the process of separation (Goodson & Hayes, 2021; Koenig et al., 2003). Thus, whether education is a risk or protective factor of IPV is not always clear. For this reason, we consider the intersection of education with literacy to unpack if there is an additional dimension that has been overlooked and which can proxy forms of cognitive/intellectual disability.

The research from the Global North is clear that persons with disabilities are at increased risk of victimization (Harrell, 2017; Miller et al., 2021), including gender-based violence (Breiding & Armour, 2015), and often experience more adverse consequences when compared to victims without disabilities (Hayes & Powers, 2021). What remains less clear is if this association generalizes to persons with disabilities across the Global South, including India. As noted above, research suggests extent frameworks may not be applicable outside of the western context they were developed in (Hayes et al., 2021; VanderEnde et al., 2012). Among the few studies which have examined IPV risk among persons with disabilities in India, Riley and colleagues (2022) found that those with disabilities within Mumbai had a greater risk of IPV. This item was nevertheless limited to disability in general (i.e., yes/no disability). As noted within national surveys in the USA, persons with cognitive disabilities are at greater risk of victimization (Harrell, 2017), necessitating a more nuanced measure. Indian women with disabilities, like women with disabilities who live in the Global North, have been excluded from broader conversations (Ghosh et al., 2022) but there are also deep-seated cultural and religious norms that stigmatize those with a disability in India (Kumar et al., 2012).
Oftentimes in developing regions such as areas within the Global South, women with disabilities are forced to adapt to their circumstances or hide disabilities in order to support family members, due to either lack of access to resources or familial support for their disabilities, particularly in contexts where traditional gender roles predominate (Menon et al., 2014; Sharma & Sivakami, 2019). As a consequence, women with disabilities often face difficulty attaining education or employment compared to persons without disabilities (Nayak, 2013). Because of this, women with disabilities may be perceived as representing a doubly marginalized strata of society, thus forcing them to indefinitely remain on the cusp of both receiving care and functioning with an abled society (Ghosh et al., 2022; Menon et al., 2014). Further, persons with disabilities may have an elevated risk of victimization yet may feel less empowered or able to engage in help-seeking behaviors, given their potential reliance upon perpetrators for daily living (Hasan et al., 2014; Nayak, 2013; Valentine et al., 2019), or the lack of accommodations available through agencies.

Despite being a survey on health and demography, the National Family Health Survey (the data analyzed in the current study) is also limited in the measures they include on disability. Nevertheless, educational and literacy items can provide context to the respondent’s experience and represent if the respondent has an intellectual or cognitive impairment or if they are blind, as this may affect their ability to read in schools without adequate accommodations. That is, if the person completes some level of education but still cannot read, a skill most children begin to learn between the ages of four and seven, it is possible they may have a cognitive/intellectual disability that impedes their ability to excel at school and which may exacerbate their risk of IPV. In addition, the literacy measure captures if the respondent is blind given early schooling is heavily reliant on text reading and may lack accommodations. This sensory difference may exacerbate risk of IPV for Blind respondents. Collectively, these items allow us to explore IPV vulnerability among marginalized women who may not experience such severe disabilities that they are institutionalized (Human Rights Watch, 2014) but who nonetheless may be at greater risk (Breiding & Armour, 2015; Riley et al., 2022).

**Current Study**

The current study has three goals. First, we assess if blind respondents are more likely to experience IPV. Second, the study examines whether an association exists between respondents with cognitive/intellectual disabilities and IPV risk by examining the intersection of literacy and educational attainment. Finally, the study considers context-specific risk factors associated with IPV within India as well as interview effects. By examining these themes, the study aims to inform policies oriented toward reducing IPV within the Global South, and extend frameworks of risk to reflect context-specific factors. Consequently, the study has three research questions:

1. **RQ₁**: To what extent are Blind respondents at greater risk of IPV in India?
2. **RQ₂**: To what extent do cognitive and intellectual disabilities, literacy, and educational status affect IPV risk in India?
3. **RQ₃**: Considering the Indian context, to what extent are risk factors and factors related to survey administration associated with IPV risk?
Data and Methods

To examine the above research questions, the current study uses secondary data stemming from the fourth and fifth wave of India’s National Family Health Survey (NFHS-4; NFHS-5). The NFHS is a cross-sectional and nationally representative survey. The NFHS-4 was conducted over 2015–2016, while the NFHS-5 was conducted over 2019–2021 (International Institute for Population Sciences (IIPS) and ICF, 2017; 2021). Similar to the work of Zainiddinov (2022), we combined the two waves of data. The NFHS is a variation of the standardized Demographic and Health Surveys (DHS), which are administered in over 90 countries in 5-year intervals (Demographic and Health Surveys n.d). Both waves of the NFHS collected data that relates to a wide range of family- and individual-level health and welfare considerations, and examined topics concerning nutrition, reproductive health, HIV, women’s autonomy, and IPV incidence. The NFHS was administered by the IIPS in conjunction with the India’s Ministry of Health and Family Welfare, and was designed to capture data across India’s 29 states, seven Union territories, and 640 districts (IIPS, 2017; 2021; Mondal & Paul, 2021a).

The NFHS used a stratified, two-stage sample administered across Indian states, urban centers, and slums. Clusters for sampling were determined via analysis of Census Enumeration Blocks based upon 2011 census data, resulting in the selection of 28,586 primary sampling units in the NFHS-4 and 30,456 in the NFHS-5 (IIPS, 2017; 2021). Of these identified sampling units, fieldwork was conducted in 28,522 sampling units from the NFHS-4 and 30,198 from the NFHS-5 (IIPS, 2017; 2021). From the NFHS-4, a total of 699,686 women aged 15–49 were identified and interviewed from an eligible pool of 723,875 women (response rate = 97%). From the NFHS-5, information was gathered from a total of 724,115 women from a total pool of 747,116 eligible persons (response rate = 97%). Among those women selected for NFHS-4 surveying, 83,397 ever-married women were randomly selected for completion of modules relating to IPV, of which 79,729 women successfully completed. From the NFHS-5, a total of 72,320 women completed the module. It is noted within the NFHS final reports that only one eligible, ever-married woman per household was selected, and that women who failed to complete the IPV modules often did so as a result of privacy or other concerns. As a result, a response rate of approximately 96% was attained for IPV modules among eligible women from both the NFHS-4 and the NFHS-5 (IIPS, 2017; 2021). A more detailed report of the NFHS sampling design and administration may be found in the final reports.

Dependent Variables

Two outcomes were considered for analyses. First, physical IPV was captured with a binary indicator whereby if the respondent’s partner ever (1) pushed, shook, or threw something at her; (2) slapped her; (3) punched her with a fist or hit her with something harmful; (4) kicked or dragged her; (5) strangled or burnt her; or (6) threatened her with a knife or gun she was coded “1” = experienced physical IPV. Respondents who stated their partner never engaged in any of the six behaviors were coded “0.”

3 In the 2015–2016 NFHS, age at marriage was limited to currently married women. As a result, analyses were limited to women who were currently married.
The second outcome measure focused on controlling behavior. Similar to physical IPV, a dichotomous measure was created where “1” represents the respondent’s partner ever (1) was jealous she talked to another man, (2) insisted on knowing where she was, (3) accused her of being unfaithful, (4) humiliated her, (5) threatened her, (6) insulted her, (7) did not allow her to meet with female friends, or (8) limited contact with her family. Respondents who never experienced any of these behaviors were coded “0.” Extant research has also used binary measures for the analysis of IPV (Fakir et al., 2016; Hayes & van Baak, 2022).

Independent Variables

We considered two interrelated dimensions — disability and education/literacy. The disability items were created from the broader education/literacy measures. Respondents were asked by the interviewer to read any part of a sentence on a card. The interviewer then denoted if the respondent could read the entire sentence, could not read the sentence at all, could partially read the sentence, or was blind. Because these items were subsumed in the literacy question, the reference category remains the same across the disability items and the education/literacy items — either higher education or secondary/higher education. First, we assessed the effect of disability on the experience of IPV. If the respondent identified as blind when presented with a sentence, they were coded “1” = Blind. Respondents who had education but could not read the sentence were coded “2” = cognitive/intellectual disability (has education but cannot read).

Next, we considered the intersection between education and literacy. Respondents who had no education and cannot read were coded “3” and respondents who could read but had no education were coded “4.” Respondents who had some education and were able to partially read the sentence were coded “5.” Those with only primary education were coded “6.” Lastly, those with secondary education were coded “7.” It should be noted we were also interested in if there were differences between those who had higher education and those who had secondary education but also how these groups differed from those who only had a primary education. Consequently, we combined those with higher education and those with secondary education into one group to serve as a reference category for some analyses.

Control Variables

We included a series of control measures that prior analyses of NFHS and DHS data have shown to be associated with IPV and which have been shown to vary across contexts (Ahi-nkorah, 2021; Hayes & Randa, 2021). Working status (1 = working), if the respondent’s mother, father, brother, or sister ever abused her (1 = history of family violence), if she ever witnessed her father abuse her mother (1 = witnessed parental violence), if her husband drinks alcohol (1 = husband drinks), and if she lived in an urban area (1 = urban, 0 = rural) were all included as dummy variables. Age at marriage, age at the time of the interview, and number of children she ever gave birth to were included as continuous items.

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4 The count measures for physical abuse (skewness = 2.50) and controlling behavior (skewness = 1.76) both showed evidence of skewness. There was also substantial evidence of kurtosis (physical abuse kurtosis = 9.20; controlling behavior kurtosis = 6.08).
The attitudes toward IPV index was created from five measures. Respondents reported if they believed it was ever justified for a husband to abuse his wife if she (1) neglects the children, (2) argues with him, (3) goes out without telling him, (4) refuses to have sex, or (5) burns the food. These items were summed together (Cronbach’s alpha = 0.83).

Similarly, respondents reported their level of decision-making related to healthcare, large purchases, when to visit family, and how to spend her husband’s earnings. For each of the four items, if the respondent reported she made the decision or that she jointly made the decision with her partner, she was coded “1.” These items were collapsed into a summative scale representing decision-making (Cronbach’s alpha = 0.86).

Finally, the wealth index is a standardized item than ranges from 1 (the poorest) to 5 (the richest). This index presumes that wealth is an “underlying unobserved dimension that can be estimated using latent variable techniques” (Rutstein, 2008). The index is derived from the respondent’s standard of living as well as the observable assets they possess and was included as a continuous measure. While we cannot control for a respondent’s caste (i.e., Brahmin, Kshatriyas, Vaishyas, and Shudras as well as those who fall outside the caste [Dalits or untouchables]; Bidner & Eswaran, 2015), we include wealth as a measure of social hierarchy.

Survey Control Variables

We included three binary measures that indicate if the interviewer noted that someone interrupted the IPV module. The three items captured if the respondent’s husband, another man, or another woman interrupted the interview. Finally, the Indian DHS was offered in 21 languages though Hindi was by far the most common (49.53%). The remaining languages were used in anywhere between 0.01% (Kashmiri) and 7.05% (English) of the survey administrations. We included an item that represented if the survey was administered in a language other than Hindi or English where 1 = Not administered in Hindi or English. Finally, we included a binary measure if the respondent was drawn from either 0 = 2015–2016 wave or 1 = 2019–2021 wave.

Analytic Plan

Given the binary nature of the outcome measures, logistic regressions were estimated. First, we examine the effect of if the respondent cannot read in conjunction with their level of education or if they are blind on the odds of ever experiencing physical IPV. The first model uses higher education as the reference category. The second model combines higher and secondary education as the reference category. We then introduce a control measure for if the interview was not conducted in Hindi or English. We repeat this for the outcome measure that represented if the respondent ever experienced controlling behavior. Given the complex sample design of the NFHS (i.e., two-stage probability sample) and the desire to conduct significance testing, analyses adjust for clustering, stratification, and weighting (Croft et al., 2018). The IPV weight was used for the complex sample design weighting process. Sample weights “adjust for differences in the probability of selection and interview between cases in a sample, due to either design or happenstance” in an effort

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5 These estimates are based on the complete cases used for analyses and are unweighted.
to produce accurate representation (Croft et al., 2018). Given the rigorous nature of the NFHS data collection effort, many of the items were not missing data (see Table 1). As such, missing data was listwise deleted.

| Dependent variable                      | Mean/Percent | Std. Err | Unweighted N | Minimum | Maximum | Percent missing |
|-----------------------------------------|--------------|----------|--------------|---------|---------|----------------|
| Physical IPV                            | 27.96%       | -        | 30,836       | 0       | 1       | 0.00%          |
| Controlling behavior                    | 50.11%       | -        | 55,470       | 0       | 1       | 0.00%          |
| Disability                              |              |          |              |         |         |                |
| Blind                                   | 0.49%        | -        | 418          | 0       | 1       | 0.00%          |
| 5 Cognitive/Intellectual (cannot read but has education) | 5.51%        | -        | 6477         | 0       | 1       | 0.00%          |
| Education and literacy                  |              |          |              |         |         |                |
| Higher or secondary education           | 57.17%       | -        | 63,746       | 0       | 1       | 0.00%          |
| Higher education                        | 16.51%       | -        | 17,805       | 0       | 1       | 0.00%          |
| Secondary education                     | 40.66%       | -        | 45,941       | 0       | 1       | 0.00%          |
| Primary education                       | 2.69%        | -        | 3277         | 0       | 1       | 0.00%          |
| No education cannot read                | 27.39%       | -        | 32,738       | 0       | 1       | 0.00%          |
| Can read but no education               | 1.39%        | -        | 1677         | 0       | 1       | 0.00%          |
| Some education some reading             | 5.37%        | -        | 6568         | 0       | 1       | 0.00%          |
| Independent variables                   |              |          |              |         |         |                |
| Urban                                   | 32.58%       | -        | 31,031       | 0       | 1       | 0.00%          |
| Wealth index                            | 3.06         | 0.01     | -            | 1       | 5       | 0.00%          |
| Husband drinks alcohol                  | 25.18%       | -        | 33,066       | 0       | 1       | 0.00%          |
| Decision-making index                   | 3.06         | 0.01     | -            | 0       | 4       | 1.07%          |
| History of family violence              | 6.18%        | -        | 6913         | 0       | 1       | 0.76%          |
| Witnessed parental violence             | 20.32%       | -        | 21,724       | 0       | 1       | 3.84%          |
| Attitudes toward IPV                    | 1.14         | 0.01     | -            | 0       | 5       | 1.53%          |
| Working                                 | 25.52%       | -        | 29,429       | 0       | 1       | 0.00%          |
| Number of children                      | 2.37         | 0.01     | -            | 0       | 15      | 0.00%          |
| Age at marriage                         | 18.48        | 0.02     | -            | 0       | 48      | 0.00%          |
| Age                                     | 33.31        | 0.05     | -            | 15      | 49      | 0.00%          |
| Survey controls                         |              |          |              |         |         |                |
| Husband interrupted                     | 16.25%       | -        | 18,033       | 0       | 1       | 0.00%          |
| Other man interrupted                   | 12.74%       | -        | 13,649       | 0       | 1       | 0.00%          |
| Other woman interrupted                 | 13.33%       | -        | 14,332       | 0       | 1       | 0.00%          |
| Not Hindi or English                    | 59.58%       | -        | 53,856       | 0       | 1       | 0.00%          |
| 2019–2021 survey                        | 50.12%       | -        | 56,935       | 0       | 1       | 0.00%          |

Table 1 Descriptive statistics (N=114,901)
Results

Findings from the logistic regression analyses can be found in Table 1. Models 1–3 present the results where physical IPV is the outcome measure. Relating to research question 1 above, in Model 1, blind respondents were associated with higher odds of physical IPV compared to respondents who did not have vision difficulties and who had higher education (Exp(B) = 1.77, p < 0.05). Concerning research question 2 above, compared to respondents who had higher education, respondents who had an education but could not read (i.e., cognitive/intellectual disability; Exp(B) = 1.22, p < 0.01), had no education and could not read (Exp(B) = 1.21, p < 0.001), and had some education and was able to read some of the sentence (Exp(B) = 1.27, p < 0.001) were all associated with higher odds of physical IPV. When we recoded the level of education measure to combine those with secondary and higher education, all associations remained (Model 2, Table 2). Concerning research question 3, Model 3 accounts for the language of the interview. Respondents whose interview was in a language other than Hindi or English were associated with lower odds of physical IPV than respondents whose interview was in Hindi or English (Exp(B) = 0.76, p < 0.001). Again, all associations between disability and education/literacy remained.

It is also important to identify the significant covariates of physical IPV, which retain their effects across Models 1–3 in Table 2. We report the statistics from Model 3. Greater wealth (Exp(B) = 0.83, p < 0.001), more decision-making (Exp(B) = 0.91, p < 0.001), and a later age at marriage (Exp(B) = 0.97, p < 0.001) were all associated with lower odds of physical IPV. Respondents whose husband drank alcohol (Exp(B) = 2.80, p < 0.001), compared to those whose partner did not, were associated with higher odds of physical IPV. If the respondent had a history of family violence (Exp(B) = 2.23, p < 0.001), witnessed parental violence (Exp(B) = 3.14, p < 0.001), or was working (Exp(B) = 1.21, p < 0.001), compared to those who did not, were all associated with higher odds of physical IPV. Respondents who had more supportive attitudes toward IPV (Exp(B) = 1.16, p < 0.001), had more children (Exp(B) = 1.11, p < 0.001), or were older (Exp(B) = 1.01, p < 0.001) were all associated with higher odds of physical IPV.

Models 4–6 in Table 2 present the findings where controlling behavior is the outcome measure. Relating to research question 1, findings in Model 4 indicate that Blind respondents were associated with higher odds of controlling behavior compared to respondents who did not have vision difficulties and who had higher education (Exp(B) = 1.53, p < 0.05). Compared to respondents who had higher education, respondents who had no education and could not read (Exp(B) = 1.13, p < 0.001) and who had no education but was able to read some of the sentence (Exp(B) = 1.28, p < 0.001) were all associated with higher odds of controlling behavior. Model 5 once again combines higher and secondary education into the reference category, and offers insights into research question 2. All associations remain. Model 6 includes the language of the interview in line with research question 3, which was significant. Respondents’ whose interview was not in Hindi or English was associated with lower odds of experiencing controlling behavior compared to respondents whose interview was in Hindi or English (Exp(B) = 0.46, p < 0.001). With the inclusion of this item, if the respondent could not read and does not have an education as well if the respondent could read but does not have an education both become not significant.

With the exception of working status and number of children, findings were largely consistent across the three models. Findings from Model 6, which accounts for the language of the interview, are reported. Wealthier respondents (Exp(B) = 0.87, p < 0.001), respondents who had more decision-making power (Exp(B) = 0.91, p < 0.001), respondents
Table 2 Logistic regression examining the association between disability as well as education/literacy and the experience of physical IPV and controlling behavior (N=114,901; strata=3496; primary sampling unit = 18,935)

| Variables                        | Physical abuse | Controlling behavior |
|----------------------------------|----------------|----------------------|
|                                  | Model 1\(^a\) | Model 2\(^b\) | Model 3\(^b\) | Model 4\(^a\) | Model 5\(^b\) | Model 6\(^b\) |
| Disability                       |                |                      |                |                |                |                |
| Blind                            | 1.77\(*\)      | 1.71\(*\)            | 1.67\(*\)      | 1.53\(*\)      | 1.58\(*\)      | 1.47\(*\)      |
| Cognitive/Intellectual (has education but cannot Read) | 1.22\(**\) | 1.18\(**\) | 1.17\(**\) | 1.05 | 1.09 | 1.06 |
| Education and literacy           |                |                      |                |                |                |                |
| Secondary education              | 1.05           | -                    | -              | 0.95           | -              | -              |
| Primary education                | 1.07           | 1.04                 | 1.01           | 0.99           | 1.03           | 0.95           |
| No education cannot read         | 1.21\(***\)    | 1.16\(***\)          | 1.11\(**\)     | 1.13\(**\)      | 1.17\(***\)    | 1.02           |
| Can read but no education        | 1.06           | 1.02                 | 0.98           | 1.28\(*\)      | 1.33\(**\)      | 1.18           |
| Some education some reading      | 1.27\(***\)    | 1.23\(***\)          | 1.22\(***\)    | 0.94           | 0.98           | 0.96           |
| Control variables                |                |                      |                |                |                |                |
| Urban                            | 1.07           | 1.07                 | 1.07           | 0.98           | 0.98           | 0.99           |
| Wealth index                     | 0.83\(***\)    | 0.83\(***\)          | 0.83\(***\)    | 0.86\(***\)    | 0.86\(***\)    | 0.87\(***\)    |
| Husband drinks                   | 2.78\(***\)    | 2.78\(***\)          | 2.80\(***\)    | 1.55\(***\)    | 1.55\(***\)    | 1.57\(***\)    |
| Decision-making index            | 0.91\(***\)    | 0.91\(***\)          | 0.91\(***\)    | 0.90\(***\)    | 0.90\(***\)    | 0.91\(***\)    |
| History of family violence       | 2.22\(***\)    | 2.22\(***\)          | 2.23\(***\)    | 1.68\(***\)    | 1.68\(***\)    | 1.71\(***\)    |
| Witnessed parental violence      | 3.05\(***\)    | 3.05\(***\)          | 3.14\(***\)    | 1.51\(***\)    | 1.50\(***\)    | 1.62\(***\)    |
| Attitudes toward IPV             | 1.15\(***\)    | 1.15\(***\)          | 1.16\(***\)    | 1.16\(***\)    | 1.16\(***\)    | 1.20\(***\)    |
| Working status                   | 1.18\(***\)    | 1.18\(***\)          | 1.21\(***\)    | 1.02           | 1.03           | 1.12\(***\)    |
| Number of children               | 1.13\(***\)    | 1.13\(***\)          | 1.11\(***\)    | 1.09\(***\)    | 1.09\(***\)    | 1.02\(*\)      |
| Age at marriage                  | 0.97\(***\)    | 0.97\(***\)          | 0.97\(***\)    | 0.99\(**\)     | 0.99\(**\)     | 0.98\(***\)    |
| Age                              | 1.00\(*\)      | 1.00\(\*)            | 1.01\(***\)    | 0.99\(***\)    | 0.99\(***\)    | 0.99\(**\)     |
Table 2 (continued)

| Variables                          | Physical abuse | Controlling behavior |
|-----------------------------------|----------------|----------------------|
|                                   | Model 1<sup>a</sup> | Model 2<sup>b</sup> | Model 3<sup>b</sup> | Model 4<sup>a</sup> | Model 5<sup>b</sup> | Model 6<sup>b</sup> |
| Survey/Interview control variables |                 |                      |                      |                   |                    |                     |
| Husband interrupted               | 1.08           | 1.08                 | 1.10                 | 1.28***            | 1.28***             | 1.37***             |
| Other man interrupted             | 1.03           | 1.03                 | 1.00                 | 0.97               | 0.97                | 0.90                |
| Other woman interrupted           | 0.99           | 0.99                 | 0.99                 | 1.08               | 1.08                | 1.10                |
| 2019–2021 survey                  | 1.02           | 1.02                 | 1.05                 | 0.87***            | 0.88***             | 0.93*               |
| Not in Hindi or English           |                |                      | 0.76***              |                    |                    | 0.46***             |
| Model fit statistics              |                 |                      |                      |                   |                    |                     |
| Constant                          | 0.36***        | 0.38***              | 0.42***              | 2.37***            | 2.25***             | 3.13***             |
| \( F \)                           | 225.88***      | 233.62***            | 224.24***            | 95.60***           | 99.66***            | 110.88***           |
| \( F \) degrees of freedom       | (22, 15,418)   | (21, 15,419)         | (22, 15,418)         | (22, 15,418)       | (21, 15,419)        | (22, 15,418)        |

<sup>a</sup> Reference category for education/literacy measure is higher education

<sup>b</sup> Reference category for education/literacy measure is a combined item capturing higher and secondary education

* \( p < 0.05; ** \( p < 0.01; *** \( p < 0.001 \)
who married at an older age (Exp(B) = 0.98, p < 0.001), and who were older in general (Exp(B) = 0.99, p < 0.001) were all associated with lower odds of experiencing controlling behavior. Respondents whose husband drank alcohol, compared to those whose husband did not drink alcohol, were associated with higher odds of experiencing controlling behavior (Exp(B) = 1.57, p < 0.001). If the respondent had a history of family violence (Exp(B) = 1.71, p < 0.001), witnessed parental violence (Exp(B) = 1.62, p < 0.001), or was working (Exp(B) = 1.12, p < 0.001), compared to those who did not, were all associated with higher odds of experiencing controlling behavior. Respondents who had more supportive attitudes toward IPV (Exp(B) = 1.20, p < 0.001) or those who had more children (Exp(B) = 1.02, p < 0.05) were both associated with higher odds of experiencing controlling behavior. Relating once more to research question 3 above, if the respondent’s husband interrupted the interview was associated with higher odds of experiencing controlling behavior (Exp(B) = 1.37, p < 0.001). Finally, respondents who completed the 2019–2021 wave of the survey were associated with lower odds of experiencing controlling behavior compared to respondents who completed the 2015–2016 wave (Exp(B) = 0.93, p < 0.05).

Discussion

Overall, respondents with cognitive/intellectual disabilities as well as blind respondents were associated with greater odds of ever experiencing physical IPV. Blind respondents were also associated with higher odds of ever experiencing controlling behavior, providing insights into research question 1 above. Concerning research question 2, this study adds to the growing body of work that reports equivocal findings between education and IPV (Meeker et al., 2020; Weitzman, 2014) but instead considers the interplay between education and literacy to see if we can expand our conceptualization of vulnerability as it relates to IPV. Additionally, the correlates of IPV were different for physical abuse and controlling behavior. This aligns with the body of work that conceptualizes controlling behavior as part of a larger pattern of IPV that is possible because of the socio-structural gender hierarchy (Stark & Hester, 2019). This is likely shaped by the broader social context within India (Begum et al., 2015; Mogford & Lyons, 2014; Ram et al., 2019) and the prevalence of controlling behavior among the sample.

First, blind respondents were associated with higher odds of physical IPV. Despite being a small portion of the overall population, by 2020, it was estimated that 31.6 million Indians will be blind (Dandona et al., 2001), though WHO estimates that 63 million Indian people are blind or have poor vision (Krishnan, 2020). Based on either of these estimates, there are clearly a sizeable number of persons who are therefore at increased risk of victimization. This is cause for concern as it remains unclear if Blind persons have adequate accommodations, including in the event they need to engage in help-seeking. Nevertheless, these findings highlight the potential for policies to assist Blind persons to mitigate risk and facilitate help-seeking, such as promotion of technologies or advocacy services. These themes are discussed at greater length below.

Second, in order to answer research question 2 above, we conceptualized and operationalized cognitive/intellectual disability to consider the intersection between education and literacy — a skill many children begin to acquire between the ages of four and seven. There was a significant association between cognitive/intellectual disabilities and if the respondent ever experienced physical abuse. This is consistent with prior research from the Global North that has shown increased vulnerability of IPV among women with...
disabilities (Breiding & Armour, 2015), suggesting the generalizability of this association across the globe. Yet, we did not find an association between cognitive/intellectual disabilities and if the respondent ever experienced controlling behavior. Overall, 50.11% of the sample reported they had ever experienced controlling behavior and is consistent with prior research examining such behaviors in an Indian context (Mukherjee & Joshi, 2021; Pandey et al., 2009). That is, controlling behavior is omnipresent and may be part of deep-seated cultural norms which privilege men, in India (Mondal & Paul, 2021b). While campaigns often boost the benefits of education in reducing IPV (Weitzman, 2018), this does not appear to be an effective mechanism in the Indian context when it comes to controlling behavior. Discussed below are the means by which policies may be shaped given this finding.

Third, relating to research question 3, we found that those whose interview was conducted in a language other than Hindi or English was associated with lower odds of both physical IPV and controlling behavior. The national language of India has historically been a fraught issue (Choudhury & Sharma, 2021). Given over half of the sample completed the survey in a language other than Hindi or English, it reinforces this issue is likely not going to fade away soon. It also indicates language may not necessarily represent a minoritized status within the multilingual Indian context. Given this, subsequent research may aim to disentangle the role of language as it relates to IPV risk within multilingual areas of the Global South and beyond.

Fourth, we also controlled for previously identified correlates of IPV (Kimuna et al., 2013; Mondal & Paul, 2021a). Consistent with a growing body of work on the intergenerational transmission of violence (Alexander et al., 1991; Meeker et al., 2020), if the respondent experienced violence in her family of origin or she witnessed her father abuse her mother were associated with higher odds of experiencing physical abuse or controlling behavior. Greater support for IPV was also associated with higher odds of experiencing IPV (Ler et al., 2020; Mukherjee & Joshi, 2021) while more decision-making power was associated with lower odds (Kabir et al., 2021; Mogford & Lyons, 2014). Finally, a later age at marriage was associated with lower odds of IPV (Raj et al., 2010; Speizer & Pearson, 2011). While these findings are not particularly novel, they do shed insight into the generalizability of the correlates of IPV across nations with very different socio-structural dimensions.

Limitations

There are limitations that merit mention. First, while we conceptualize those who cannot read but who have an education as a form of cognitive/intellectual disabilities, we cannot be certain. This related to another central limitation. Despite being a survey on health, the NFHS, surprisingly, is quite limited in the items related to disability. This is an area for future survey design as it has been shown disability is associated with poor health outcomes (see CDC, 2019). This is even more cause for concern during the COVID-19 pandemic that has shown an elevated risk for persons with disabilities (Constantino et al., 2020). Second, because of the distribution of our outcome measure, we dichotomized the dependent variable. This diminished variability but is consistent with the body of work that has examined ever experiencing IPV rather than the count or frequency of such behaviors (Fakir et al., 2016; Hayes & van Baak, 2022). Finally, the NFHS is a cross-sectional survey, and we thus cannot be certain of temporal order. Nevertheless, it is very likely that education predated if and when the woman entered into a relationship.
Research implications

Based upon the above discussion, several implications for future research are apparent. First, the study found that the language in which NFHS surveys were administered affected IPV risk, with those administered the survey in languages other than Hindi or English having lower odds of IPV risk. Given this, subsequent research examining IPV in multilingual areas of the Global South should seek to clarify three potential mechanisms relating to variation in IPV across linguistic dialects: (1) women’s opting to take surveys in a language that husbands cannot understand as a protective or help-seeking behavior or as an attempt to elicit aid from survey administrators without their husbands knowledge; (2) women’s opting to take surveys in languages that husbands can understand, in an effort to comply with patriarchal norms toward monitoring of women’s interactions with non-family members; and (3) potential cultural norms associated within linguistic dialects toward patriarchal beliefs and support for IPV behaviors.

Second, it is noted above that while those with education who were unable to read were operationalized as persons with cognitive/intellectual disabilities, we are uncertain if this operationalization accurately reflects such persons, given the lack of measures explicitly measuring respondents’ reported cognitive/intellectual disabilities. Given this, future research examining these themes should consider more explicit measures to capture disabilities, including cognitive/intellectual disabilities. Future waves of the NFHS may consider adapting survey instruments to include the disability measures from the National Crime Victimization Survey, which have demonstrated their reliability and validity in measuring a wide range of disabilities (Brault et al., 2007). This may be particularly important for the NFHS given the nature and scope of the survey, which centers upon health concerns.

Third, the current study employed a dichotomous measure of IPV. Despite the fact that this measure is consistent with the body of work that has examined IPV (Fakir et al., 2016; Hayes & van Baak, 2022), this measure undermines deeper understanding of risk as it relates to repeat IPV victimization. Future studies may expand upon how literacy, cognitive/intellectual disabilities, and correlates of IPV affect risk in the Global South through consideration of count measures to examine if such themes are risk factors for repeat IPV victimization.

Policy implications

Further, findings demonstrate several potential implications for future research and policy as it relates to IPV prevention and help-seeking within the Global South. First, findings indicated that blind individuals faced significantly greater risk of IPV relative to others. This is particularly significant given that the number of such persons is sizeable in India (Dandona et al., 2001; Krishnan, 2020). Given this, prevention and intervention programming oriented to reduce IPV risk may consider how to appropriately convey material to Blind victims (e.g., Braille, text reader, accompaniment of an advocate to appointments) who are often further marginalized in low-wage or informal jobs (Krishnan, 2020).

Second, consistent with a growing body of work on the intergenerational transmission of violence (Alexander et al., 1991; Meeker et al., 2020), if the respondent experienced violence in her family of origin or she witnessed her father abuse her mother were associated with higher odds of experiencing IPV. Greater support for IPV was also associated with higher odds of experiencing IPV (Ler et al., 2020; Mukherjee & Joshi, 2021), while
more decision-making power was associated with lower odds (Kabir et al., 2021; Mogford & Lyons, 2014). Given this, policies aiming to reduce the prevalence and risk of IPV within the Global South may focus efforts upon those who have witnessed such behaviors among previous generations, or in communities characterized by widespread support of patriarchal values. Such approaches will ensure that those facing disproportionate risk are targeted for interventions.

Third, the current study found that there was a significant association between cognitive/intellectual disabilities — a theme conceptualized to exist at the nexus of education and literacy — and if the respondent ever experienced physical abuse. Given this, policies oriented toward reducing IPV may focus efforts towards populations which face an elevated risk. Alternatively, efforts may be made to ensure the effectiveness of education as a means of reducing IPV risk. Nevertheless, there is a cost/benefit analysis that must be considered. Programs and interventions will need to consider what is their ultimate outcome. This reinforces the argument that the Global South is not monolithic (Bhardwaj & Miller, 2021), that programming needs to be tailored to the locale (Hayes, 2021), and also needs to deliberate the overall goal. Further, prospective IPV prevention programs that integrate disability must consider the social and cultural context of the Global South that centers ableism and whereby many women may be at the cusp of such services yet not receive effective programming, due to either hiding/minimizing of disabilities themselves or family members as a result of cultural norms (Menon et al., 2014). Thus, programs must consider not only the target clientele for treatment but also the most effective means by which persons with disabilities may be reached and effectively engaged in IPV prevention programming.

Conclusion

Overall, findings indicate that blind Indian women or respondents with cognitive/intellectual disabilities are vulnerable to physical abuse. Additionally, blind respondents were at increased risk of controlling behavior. The broader context of India and ubiquity of controlling behavior shed insight into the differences in the correlates of physical abuse and controlling behavior. Additionally, findings should give caution to those designing IPV programming, especially educational programing, to really consider the ultimate goals and outcomes. Women with disabilities may be uniquely vulnerable such that “traditional” program that emphasize ableism may further exacerbate risk.

Declarations

Conflict of Interest The authors declare no competing interests.

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