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Predictors of Discordance and Concordance in Reporting of Intimate Partner Violence

Evidence from a Large Sample of Rural Ethiopian Couples

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Abstract

Intimate partner violence (IPV) is a major worldwide health challenge, and addressing this challenge requires high-quality data. This analysis uses a large-scale survey of 5,033 households in rural Ethiopia in which both men and women were surveyed about past-year IPV in order to quantify the degree of discordance, including both husband only reporting and wife only reporting, for multiple forms of IPV (emotional, physical and sexual). In addition, logistic regression is employed to analyze the effects of demographic characteristics and individual norms and behaviors on the probability of discordant reporting. The results suggest that almost half of households (44%) are characterized by discordant reporting in at least one dimension of IPV. Given the high level of discordance, 61.4% of households report any physical and/or sexual IPV using the household-level measure, compared to a rate of 41.9% from the women's data only. In addition, men who report more gender-equitable attitudes and behaviors (failing to concur with justifications for IPV, reporting higher support for gender equitable norms, and reporting a higher level of female engagement in decision-making and intrahousehold task-sharing) are more likely to be members of wife only reporting households: i.e., they are less likely to report perpetration of IPV. Women who report more gender-equitable attitudes and behaviors, by contrast, are more likely to be members of husband only reporting households.

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Introduction

Intimate partner violence is a serious worldwide health challenge. Women who experience IPV as well as their families experience adverse health and socioeconomic consequences over both the short and long term. These consequences can include adverse effects on physical health (Campbell, 2002; Ellsberg et al., 2008), mental health (Devries et al., 2013), and reproductive and sexual health (Hill et al., 2016).

In order to effectively design interventions targeting IPV, strategies to accurately estimate its prevalence are essential. High-profile large-scale surveys collecting data on intimate partner violence (e.g., surveys conducted by the World Health Organization and the Demographic and Health Surveys) generally rely on self-reported retrospective data reported by the individual experiencing violence (Garcia-Moreno et al., 2006). Given that the majority of IPV analyses focus on male-to-female violence, this generally entails using self-reports of IPV experienced by women over a certain specified reference period.

Evidence from the United States and other high income countries, however, has suggested that reports of IPV by women are not necessarily consistent with reports of IPV by male perpetrators, and thus discordant reporting within couples is common (Armstrong et al., 2002). In many contexts, survivors report higher levels of violence vis-à-vis perpetrators (Chan, 2011; Hamby, 2005). Reasons for discordant reporting can include social desirability bias, recall bias, and differences in partners' assessment of the definition of IPV. Evidence from a subset of low and middle income countries (LMICs) where matched couples' data is available has suggested discordant reporting is similarly non-trivial in these contexts (Halim et al., 2018; Haushofer et al., 2020; Khawaja & Tewtel-Salem, 2004; Yoshikawa et al., 2021; Yount & Li, 2012).

Moreover, a second form of discordance can also be observed if men report perpetration of IPV while their female partners do not report any experience of violence.

This paper presents new evidence on concordance and discordance in reporting of IPV using a large sample of matched couple data from rural Ethiopia including more than 5,000 couples. The objective is to quantify the degree of discordance, including both husband only reporting and wife only reporting, for multiple forms of IPV (emotional, physical and sexual). In addition, the analysis examines variables, including demographic characteristics and individual norms and behaviors, that are predictive of within-couple discordance in IPV reporting.

Methods

Data

This paper utilizes a survey conducted as part of a larger cluster randomized controlled trial conducted jointly by the Abdul Latif Jameel Poverty Action Lab (J-PAL) at the Massachusetts Institute of Technology (MIT), the Addis Ababa University School of Public Health (AAU), the Ethiopian Public Health Association (EPHA), and EngenderHealth. The trial aimed to assess the effectiveness of a participatory, gender transformative intervention called Unite for a Better Life (UBL) that was designed to prevent IPV and HIV transmission and was delivered within the context of the Ethiopian coffee ceremony (Sharma & Scott, n.d.). The trial included three experimental treatment arms, in which UBL was delivered to groups of men, women, or couples.

The study site is the Gurague zone of the Southern Nations, Nationalities and People's Region (SNNPR) in Ethiopia. This is a rural area located approximately 140 kilometers south of Addis Ababa. Baseline data from our sample suggests that households in this zone are overwhelmingly engaged in subsistence agricultural production, and education levels are relatively low: three quarters of women report no formal education, and around 40% of men similarly have never

attended school (Sharma et al., 2020b). Around 60% of sampled households are Muslim and 40% Christian, primarily Ethiopian Orthodox. Polygamy is relatively rare, observed in no more than 10% of households. More details about the trial design, data collection, methodology, intervention and main results are provided in previous papers (Sharma et al., 2020a).

The sample included 64 villages (kebeles) in four districts in the Gurague zone (Mareko, Meskan, Silte and Sodo). In each village, the household sampling frame was constituted utilizing the roster of households maintained by community health extension workers (HEWs), and included all households in which a married or cohabiting couple characterized by a female spouse between the ages of 18 to 49 was resident. Using this sampling frame, 106 households from each kebele were randomly selected for inclusion at baseline, and replaced if ineligible. A further household-level randomization selected 50% of households for surveys of the husband at baseline, and 50% of households for surveys of the wife at baseline. In polygamous households, one woman was selected for surveying via simple random sampling. The baseline survey was conducted in 2014—2015.

The survey of interest for this analysis is the endline survey conducted in 2017—2018. All baseline respondents as well as their spouses who could be identified and provided consent were surveyed, for a full sample of 5,946 men and 5,891 women in the endline survey. Ethical approval was provided by the Committee on the Use of Humans as Experimental Subjects (COUHES) at MIT (protocol number 1211005333) and by the Institutional Review Board at the AAU College of Health Sciences (protocol number 044/12/SPH).

The survey was conducted by trained male and female Amharic-speaking enumerators recruited in the study districts, using paper-based surveys. Only male enumerators administered surveys to male respondents, and only female enumerators administered surveys to female respondents.

Oral consent was obtained and questionnaires were administered in confidential settings following the ethical guidelines for IPV research developed by the World Health Organization (WHO) (Garcia-Moreno, 2001).

The questionnaire was adapted from the WHO multi-country study on domestic violence and women's health questionnaire (Garcia-Moreno et al., 2006), and was comprised of modules on socio-demographic information, gender norms and attitudes, household decision-making and task sharing, HIV and IPV. At endline, a longer questionnaire was administered to baseline respondents, and a short questionnaire was administered to the spouses of baseline respondents due to resource constraints.

Statistical analysis

The sample for this analysis includes monogamous households in which both partners were surveyed at endline. Women were surveyed about their experience of violence, and men were surveyed about their perpetration of violence. Polygamous households are not included in the analysis of concordance given that men's reports of IPV perpetration could be made with reference to a spouse other than the surveyed spouse, rendering interpretation of concordance challenging. There are 5,621 households in which both husband and wife were surveyed at endline; 588 are excluded due to reported polygamy, leaving a sample of 5,033 households.

For this analysis, we report rates of concordance and discordance for each primary form of IPV as experienced over the last 12 months: emotional violence, physical violence, sexual violence, and any physical and/or sexual violence. For each form of violence, the number and percentage of households are reported in four categories: concordant reporting that there was no IPV in the household; concordant reporting that there was IPV in the household; discordant "wife only" reporting (wife only reports experience of violence); and discordant "husband only" reporting (husband only reports perpetration of violence). The sample for each form of violence includes

only households in which both partners responded to the stated question (i.e., households in which one partner failed to respond to the question of interest are excluded).

In addition, we analyze individual- and household-level variables that may be predictive of discordant reporting. The variables of interest include demographic variables, attitudinal variables, and behavioral variables, consistent with characteristics found to be predictive of discordance in previous literature (Halim et al., 2018; Haushofer et al., 2020; Yoshikawa et al., 2021; Yount & Li, 2012). Demographic variables include binary variables for whether either spouse reports any education, binary variables equal to one if the spouse is over the age of 30, a binary variable equal to one if the household reports a wealth index above the median, and a binary variable equal to one if the household is Muslim. An additional set of binary variables captures the household's treatment assignment in the underlying randomized controlled trial. (In the trial, a community-level random assignment determined whether the community was offered an IPV prevention intervention delivered to women, men, or couples; ultimately, we observe that the treatment indicators are generally statistically significant in the analysis.)

Attitudinal variables include three variables: a binary variable equal to one if the respondent states that IPV is not justified; a binary variable equal to one if the respondent reports at least an intermediate level of support for equitable gender norms; and a binary variable equal to one if the respondent demonstrates knowledge of laws around IPV. Behavioral variables include four variables: a binary variable equal to one if the respondent reports that the male spouse is highly involved in traditionally female domestic domains; two binary variables equal to one if the respondent reports that they discussed sex or discussed HIV with their partner; and a binary variable equal to one if the respondent reports that the female spouse is involved in decision-making in the household. Traditional female domestic domains include cooking, laundry, cleaning, and childcare, and high male involvement is a binary variable equal to one if the

husband participates in two or more of these domains. Female involvement in decision-making is a binary variable equal to one if the female response is reported to participate at least partially in at least one enumerated domain of decision-making (decisions around large purchases, small purchases, and time spent with individuals outside of the household). Note that these behavioral variables would, in general, be expected to be consistent within a household, but could be perceived and/or reported differently across spouses.

While demographic variables, IPV-related outcomes, and spousal involvement in household tasks and decision-making are reported by all respondents, the additional variables capturing each spouse's attitudes and behaviors were included only in the longer surveys that were administered to the original baseline respondents, not the shorter surveys administered to spouses of baseline respondents. Accordingly, only 50% of households are represented in these regressions. For example, the regressions analyzing attitudinal variables as reported by women include only those households in which women were administered the long survey. (Note again the assignment of a household to "wife long survey" or "husband long survey" was random.) Variables reported in the long survey only are never reported simultaneously by both spouses in the same household.

For the primary analysis, we estimate multivariable logistic regressions in which binary variables equal to one if the household is a discordant wife only reporter or a discordant husband only reporter are regressed on the covariates of interest. The first specification of interest includes demographic variables as well as attitudinal and behavioral variables as reported by the wife in households in which the wife was administered a longer survey. The second specification of interest includes demographic variables as well as attitudinal and behavioral variables as reported by the husband, in households in which the husband was administered a longer survey. Standard errors are clustered at the village level.

For each form of IPV, the sample is restricted to households in which at least one partner reports this form of violence. Accordingly, we abstract from characteristics that may predict the incidence of violence itself, and focus only on characteristics that predict each form of reporting discordance (assuming that in general, any household in which either partner reports IPV is characterized by some degree of violence). The first set of regressions compares wife only reporters to households in which both partners report violence. The second set of regressions compares husband only reporters to households in which both partners report violence. The third set of regressions compares husband only reporters to wife only reporters (excluding concordantly reporting households).

Results

Table 1 reports summary statistics around concordance and discordance in the reporting of IPV. It is clear that discordance in reporting is extremely common, though it is least prevalent for physical IPV (15.0% husband only reporters and 15.9% wife only reporters, for a total of 30.9% discordant reporters), and most prevalent for emotional IPV (22.6% husband only reporters and 20.5% wife only reporters, for a total of 43.1% discordant reporters). Discordance is also relatively balanced across the identity of the reporting partner, with the exception of sexual IPV where it is more common for the husband only to report IPV.

In the final two columns of the table, we report a standard measure of prevalence of IPV in this setting based on women's reports, and then a household-level measure of IPV constructed using reports from both spouses. For the latter variable, any household in which either the husband or the wife reports perpetration or experience of IPV is identified as experiencing violence. The difference in estimated rates of IPV is clearly substantial: the prevalence of emotional IPV using the household-level measure is 79.2%, around 20 percentage points higher than the standard

woman-only measure. The prevalence of physical IPV using the household measure is 36.5%, again around 20 percentage points higher. The prevalence of sexual IPV is 51.9%, around 15 percentage points higher, and the prevalence of any physical and/or sexual IPV is 61.4%, around 20 percentage points higher. For physical IPV in particular, use of this alternate measurement method would nearly double the estimated prevalence of violence.

Tables 2 through 4 analyze individual and household characteristics that are predictive of various reporting patterns of IPV in a multivariate regression framework. Again, in each table the analysis is restricted to households in which at least one spouse reports this form of violence, while households in which both spouses report that there is no violence are excluded. Columns (1) and (2) compare households in which the wife only reports IPV to households in which both spouses report IPV. Columns (3) and (4) compare households in which the husband only reports violence to households in which both spouses report IPV, and Columns (5) and (6) compare husband only reporter households to wife only reporter households. Columns (1), (3) and (5) report analysis for the subsample of households in which women were administered the long survey, and columns (2), (4) and (6) report analysis for the sample of households in which men were administered the long survey. For each characteristic, we report the adjusted odds ratio and the 95% confidence interval; asterisks indicate significance at the 5, 1 and .1 percent level.

Table 2 reports the results for emotional violence. In Columns (1) and (2), we observe that demographic variables are generally not significantly associated with wife only discordant reporting, though more educated women are more likely to be members of wife only reporting households (AOR=1.328, in Column 1). Muslim households are also more likely to be discordant-reporting households; the channel for this effect is not clear. The coefficients on the binary variables capturing treatment assignment are not reported in Tables 2 through 4; in general, these coefficients are statistically insignificant.

Variables capturing female attitudes and behaviors are similarly insignificant (Column (1), while men who report that IPV is not justified (AOR=2.473), who report high knowledge of IPV laws (AOR=1.625), and who report high male involvement in traditionally female domains (AOR=1.982) are more likely to be members of wife only reporting households. In Columns (3) and (4), by contrast, the pattern is inverted. Demographic variables are again generally not associated with husband only discordant reporting. However, women who report support for equitable gender norms (AOR=1.392), knowledge of IPV laws (AOR=1.727), couples' discussions around HIV (AOR=1.350), and female engagement in household decision-making (AOR=1.894) are more likely to be members of husband only reporting households (Column 3). Male attitudes and behaviors are generally not associated with discordance (Column 4).

In the final two columns, the sample is restricted to both types of discordant reporting households. Here, we observe that households in which the male is more educated and the female is less educated are more likely to be discordant husband only reporters, in addition to households with an older female and richer households. For attitudes and behaviors, female gender-equitable attitudes and behaviors are associated with a higher probability of husband only discordant reporting status, and male gender-equitable attitudes and behaviors are associated with a lower probability of husband only discordant reporting status.

Table 3 reports the results for physical violence. It is evident in Columns (1) and (2) that demographic variables and female attitudes and behaviors are again not generally associated with wife only discordant reporting status. However, men who state that IPV is not justified (AOR=2.344), who state support for equitable gender norms (AOR=2.037), who demonstrate knowledge of IPV laws (AOR=1.556), and who report female engagement in household decision-making (AOR=2.179) are significantly more likely to be members of wife only discordant reporting households (Column 2). Conversely, in Columns (3) and (4), women who

state that they support gender equitable norms (AOR=1.764) and who report female engagement in household decision-making (AOR=1.497) are more likely to be members of husband only discordant reporting households. In the final two columns we again observe that consistent with the previous results, female gender-equitable attitudes and behaviors are associated with a higher probability of husband only discordant reporting status. Male gender-equitable attitudes and behaviors are associated with a lower probability of husband only discordant reporting status.

Finally, Table 4 reports the results for sexual violence. Again, in Columns (1) and (2) demographic variables and female attitudes and behaviors are not generally associated with wife only discordant reporting status. However, men who state that IPV is not justified (AOR=1.588), who state support for equitable gender norms (AOR=2.655), who demonstrate knowledge of IPV laws (AOR=2.069), who report high male involvement in traditionally female domains (AOR=2.307) and who report female engagement in household decision-making (AOR=2.179), who report couples' discussions about sex (AOR=1.803), and who report female engagement in household decision-making (AOR=2.081) are significantly more likely to be members of wife only discordant reporting households. Conversely, in Columns (3) and (4), women who report knowledge of IPV laws (AOR=1.444), who report couples' decisions about sex (AOR=1.679), and who report female engagement in household decision-making are more likely to be members of husband only discordant reporting households. In Columns (5) and (6), female gender-equitable attitudes and behaviors are associated with a higher probability of husband only discordant reporting status. Male gender-equitable attitudes and behaviors are associated with a lower probability of husband only discordant reporting status.

Discussion

Our results suggest that almost half of households (43.7%) in this sample are characterized by discordant reporting in physical and/or sexual IPV; 24.2% of households are characterized by discordant reporting in which the woman only reports IPV, and 19.5% by discordant reporting in which the man only reports IPV. Accordingly, the estimated prevalence of past-year physical and/or sexual IPV increases significantly (from 41.9% to 61.4%) when reports of both perpetration and experience are used to construct a variable that is the union of the two.

In examining the determinants of discordant reporting, the following patterns can be detected. Demographic variables are rarely associated with discordant reporting, though there is some evidence of significant associations with discordant reporting of emotional IPV. For attitudinal and behavioral variables, the pattern of results suggests that men who report more gender-equitable attitudes and behaviors (failing to concur with justifications for IPV, reporting higher support for gender equitable norms, and reporting a higher level of female engagement in decision-making, intrahousehold task-sharing and communication around sexuality) are more likely to be members of wife only reporting households. In other words, they are less likely to report perpetration of IPV. Women who report more gender-equitable attitudes and behaviors, by contrast, are more likely to be members of husband only reporting households. Again, they are less likely to report experience of IPV.

These findings are consistent with a hypothesis that differential reporting may be driven in part by shame or social desirability bias. Respondents who report attitudes and behaviors suggestive of more gender equitable attitudes may be unwilling to simultaneously report that they are experiencing or perpetrating intimate partner violence, if they perceive IPV to be normatively undesirable, embarrassing, or otherwise inconsistent with their values. This pattern is particularly

pronounced for men, who presumably feel greater culpability in reporting their own perpetration of IPV if they otherwise profess more gender equitable attitudes. While women professing these attitudes also seem to show a lower probability of reporting experienced IPV, this phenomenon may be less salient if they do not view themselves as responsible for the pattern of violence in their relationship.

This paper contributes to a growing literature around spousal concordance in reports of IPV in low resource settings; five prior papers analyze this question, drawing on data from Kenya, Tanzania, Egypt, Nepal, and a Palestinian refugee camp in Lebanon. A much larger literature has analyzed discordance in reporting in high income contexts, primarily the U.S. (Armstrong et al., 2002). An analysis in Kenya reports discordance rates between 16% and 32% for IPV targeting women, but analyzes determinants only of spousal concordance or lack thereof (Haushofer et al., 2020). The primary conclusion is that households in which the husband has less gender-equitable attitudes (vis-à-vis his spouse) are less likely to agree in their reports of IPV, while households in which the wife has less gender equitable-attitudes (vis-à-vis her spouse) are more likely to agree.

A second paper focusing on Egypt reports that 35% of households are discordant reporters of ever-experiencing wife-beating, but analyzes demographic determinants of both forms of discordance (man only reports and woman only reports) relative to a pooled measure of concordance. The primary conclusion is that discordance is higher in households reporting a longer marriage duration, and lower in households in which the wife is more educated (Yount & Li, 2012). A similar analysis in Nepal finds that between 10% and 15% are discordant reporters of IPV and again analyzes demographic determinants of a pooled measure of discordance vis-à-vis a pooled measure of concordance, concluding that households with more educated husbands are more likely to report concordance (Yoshikawa et al., 2021). Another recent analysis in Tanzania reports rates of discordance between 36% and 45% for multiple forms of IPV over the

last 12 months. The authors then conduct a convergent validity analysis to examine whether men's and women's reports are correlated with validated risk factors (e.g., gender attitudes, a history of childhood trauma and substance use). They conclude that both sets of reports are informative about IPV, but do not explore determinants of discordance (Halim et al., 2018).

Data from a sample of Palestinian refugees in Lebanon constitutes a partial outlier in this literature, in that the reported rates of discordance (for wife-beating) are quite low, around 5%, though slightly higher for reports of ever beating. The authors conduct a limited analysis of whether demographic variables predict discordance and find that households with a younger husband are more likely to be discordant reporters, but do not distinguish between the two different forms of reporting discordance (Khawaja & Tewtel-Salem, 2004).

The analysis reported here differs from the existing literature in several respects. Our paper is the first to differentiate between the full set of potential outcomes of concordance (in which both or neither spouse reports IPV) and discordance (in which either the wife or the husband solely reports IPV). In particular, we focus on determinants of discordant reporting vis-à-vis concordant reporting of violence (not concordant reporting of the absence of violence), enabling us to analyze factors that predict patterns of reporting, as distinct from patterns of violence incidence itself. Our paper is also the first to draw on a richer and more detailed set of variables capturing norms and behaviors linked to gender equitable attitudes, thus enabling us to move beyond a simpler analysis of demographic variables.

Our primary findings about demographic determinants of concordance are broadly consistent with prior findings that demographic variables do not predict patterns of discordant reporting in Kenya or Lebanon (Haushofer et al., 2020; Khawaja & Tewtel-Salem, 2004), but distinct from the pattern in Egypt and Nepal in which households with more educated spouses are more likely

to report agreement on the incidence of IPV (Yoshikawa et al., 2021; Yount & Li, 2012). Our findings that more gender equitable attitudes and behaviors on the part of either spouse are associated with a lower probability that this spouse reports IPV are novel in the literature, and suggestive of the role of shame, stigma and social desirability bias in IPV reporting.

Previous literature around reporting of IPV in developing countries has generally highlighted reasons that women might fail to report violence due to the fear of limited confidentiality and associated risks of retaliation (Ellsberg et al., 2001). These phenomena are particularly salient in face-to-face interviews (Chan, 2011), and virtually all data collection around IPV in LMICs is conducted via face-to-face interviews. A broader literature on the determinants of disclosure for intrafamily violence has identified that social desirability, shame and guilt can be important determinants of reporting both violence perpetration and the experience of violence (Knapp & Kirk, 2003; Rosenbaum & Langhinrichsen-Rohling, 2006). However, empirical evidence around these phenomena in LMICs has been limited.

Beyond the literature on discordance in couple-matched data, our findings also link to a broader literature on disclosure and help-seeking among women experiencing IPV in LMICs. This literature examines predictors of disclosure to and help-seeking from third parties such as family members and formal institutions among the population of women who identify themselves as experiencing IPV to the researcher or enumerator. In general, these findings have emphasized the importance of variables capturing empowerment or socioeconomic status: women who are employed and who have stronger social connections or more financial decision-making power are more likely to disclose violence or seek help after violence in a range of contexts (Fleming, 2016; Frías, 2013; Katiti et al., 2016; Leonardsson & San Sebastian, 2017; Maticka-Tyndale et al., 2020). Similarly, a multi-country study conducted using Demographic and Health Survey

data finds urban residence and increasing age are associated with an increased likelihood of formal reporting of IPV (Palermo et al., 2014).

However, individual-level variables capturing demographics or empowerment are not predictive of help-seeking behavior in some contexts (Linos et al., 2014; Mahenge & Stöckl, 2020; Rowan et al., 2018; Spencer et al., 2014). The latter pattern is more consistent with our findings in this paper. Other variables (particularly violence severity) are also identified as major predictors of willingness to disclose and/or seek help following IPV (Leonardsson & San Sebastian, 2017; Mahenge & Stöckl, 2020; Maticka-Tyndale et al., 2020; Parvin et al., 2016; Rowan et al., 2018; Spencer et al., 2014; Tenkorang et al., 2017).

The role of social norms and gender attitudes appears to be more complex. We present evidence that women who report more equitable norms and behaviors are more likely to be members of discordant husband only reporting households, failing to report IPV. Some literature on disclosure to third parties, however, has concluded that women who express more equitable attitudes around IPV (for example, stating that violence is not solely a private matter, or expressing low tolerance of violence) are more likely to disclose violence to third parties (Andersson et al., 2010; Tenkorang et al., 2018). In Nigeria, however, tolerance of IPV is not predictive of willingness to disclose violence (Okenwa et al., 2009), and in Kenya, women experiencing stigma linked to IPV are more likely to disclose violence (Maticka-Tyndale et al., 2020) These patterns are not necessarily contradictory. It may be that women who have more gender-equitable views are less likely than their spouses to report IPV to an enumerator (and thus more likely to be in discordant-reporting households), but conditional on reporting to an enumerator, the relationship between gender norms and third party disclosure is very different. Future research may productively explore further the complex role of gender equitable norms in

shaping both patterns of discordant and concordant disclosure within couples and disclosure by women experiencing violence to third parties.

It should also be noted that the relationship between attitudes and discordance is generally even more pronounced for men: men who state they have gender equitable attitudes are much more likely to be members of discordant wife only reporting households, suggesting they are ashamed or unwilling to report their own perpetration. To our knowledge, no existing literature has examined patterns of third-party disclosure (i.e., disclosure to a party other than the enumerator / researcher) among men who self-identify as IPV perpetrators, presumably because such disclosure is rare and/or legally risky, depending on the context. Accordingly, this evidence serves as a novel contribution to our understanding of the self-perception of male perpetrators.

Relative to the existing literature, this analysis has a number of strengths. We draw on data from a very large sample, analyzing data from approximately 5,000 couples in rural Ethiopia; by contrast, existing studies on discordance use data from between 400 and 950 couples. We separately analyze determinants of both forms of discordance and concordance, and utilize an unusually detailed set of variables capturing norms and behaviors.

The analysis also has a number of limitations. Given that the sample is drawn from only four districts and community-level data is not available, we are not able to examine broader or community-level determinants of discordant reporting. While our analysis contributes to provide evidence about discordance in Ethiopia, the findings may not be informative about other diverse contexts. In addition, we do not conduct a validity analysis parallel to other analyses in the literature to assess the relative reliability of men's versus women's reports (Halim et al., 2018), and focus primarily on the predictors of various types of discordance.

Conclusion

Our analysis suggests discordance in reporting of IPV between men and women is non-trivial in a sample of matched couples in rural Ethiopia. Moreover, norms and behaviors linked to gender equity are strongly associated with discordance: individuals reporting more equitable attitudes are less likely to report their own perpetration or experience of IPV. Our findings have implications for programming and research, suggesting that men's reports of perpetration of IPV are a meaningful and useful additional source of data around the prevalence of violence, and do not solely reflect underreporting of violence by perpetrators. Accordingly, in research and programmatic contexts where only men are surveyed, it may still be productive to collect data on the perpetration of IPV, rather than restricting this form of data collection only to surveys that include women. Household-level indicators that incorporate data reported by both men and women may also be more informative about the prevalence of IPV, and can also be used as supplementary outcome variable for trials of interventions targeting IPV (Sharma et al., 2020a).

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Table 1: Summary statistics for concordance and discordance

	Concordance - no IPV		Concordance - IPV		Discordance - husband only reporter		Discordance - wife only reporter			Woman's reported experience of IPV	Household reported experience of IPV
	N	%	N	%	N	%	N	%	Total N	%	%
Emotional IPV	1048	20.8	1816	36.1	1138	22.6	1031	20.5	5033	0.587	0.792
Physical IPV	3181	63.5	283	5.6	751	15.0	794	15.9	5009	0.206	0.365
Sexual IPV	2408	48.1	585	11.7	1236	24.7	774	15.5	5003	0.365	0.519
Any physical and/or sexual IPV	1931	38.6	887	17.7	1211	24.2	978	19.5	5007	0.419	0.614

Table 2: Predictors of discordant reporting for emotional intimate partner violence

	(1)	(2)	(3)	(4)	(5)	(6)
	Discordance - wife only reporter compared to concordant reporter of IPV		Discordance - husband only reporter compared to concordant reporter of IPV		Discordance - husband only reporter compared to wife only reporter of IPV	
	Sample: Women long survey OR (CI)	Sample: Men long survey OR (CI)	Sample: Women long survey OR (CI)	Sample: Men long survey OR (CI)	Sample: Women long survey OR (CI)	Sample: Men long survey OR (CI)
Male education	1.025 (0.807 - 1.302)	0.907 (0.720 - 1.144)	1.079 (0.836 - 1.394)	1.115 (0.879 - 1.414)	1.070 (0.817 - 1.403)	1.331* (1.049 - 1.690)
Female education	1.328* (1.034 - 1.706)	1.093 (0.804 - 1.487)	0.982 (0.742 - 1.299)	0.768 (0.580 - 1.016)	0.677* (0.483 - 0.948)	0.722* (0.532 - 0.980)
Male over age 30	0.884 (0.656 - 1.191)	1.000 (0.703 - 1.421)	0.950 (0.666 - 1.354)	1.129 (0.807 - 1.581)	1.012 (0.691 - 1.482)	1.159 (0.814 - 1.651)
Female over age 30	1.276 (0.980 - 1.662)	1.292 (0.973 - 1.715)	1.028 (0.821 - 1.287)	0.837 (0.624 - 1.124)	0.884 (0.681 - 1.146)	0.649** (0.469 - 0.898)
Wealth index above median	1.146 (0.907 - 1.446)	0.983 (0.793 - 1.218)	0.867 (0.651 - 1.156)	0.826 (0.656 - 1.040)	0.721* (0.542 - 0.959)	0.837 (0.632 - 1.109)
Muslim	0.559*** (0.416 - 0.750)	0.734* (0.543 - 0.993)	0.537*** (0.399 - 0.721)	0.798 (0.591 - 1.077)	0.908 (0.668 - 1.235)	1.094 (0.824 - 1.454)
Female: IPV not justified	0.819 (0.636 - 1.055)		1.197 (0.888 - 1.612)		1.452* (1.055 - 1.999)	
Female: Support for equitable gender norms	1.097 (0.890 - 1.354)		1.392* (1.079 - 1.796)		1.306 (0.974 - 1.751)	
Female: Knowledge of IPV laws	1.104 (0.881 - 1.383)		1.727*** (1.404 - 2.124)		1.599*** (1.295 - 1.974)	
Female: Reports high male involvement	1.565 (0.915 - 2.675)		1.122 (0.647 - 1.944)		0.706 (0.402 - 1.241)	
Female: Reports couples' discussions (HIV)	0.915 (0.715 - 1.170)		1.350* (1.063 - 1.714)		1.501** (1.120 - 2.013)	
Female: Reports couples' discussions (sex)	1.014 (0.750 - 1.373)		1.071 (0.784 - 1.462)		1.114 (0.822 - 1.512)	
Female: Reports female decision-making	1.055 (0.894 - 1.244)		1.894*** (1.430 - 2.509)		1.760*** (1.313 - 2.359)	
Male: IPV not justified		2.473*** (1.923 - 3.182)		0.917 (0.716 - 1.176)		0.371*** (0.278 - 0.495)

Male: Support for equitable gender norms		1.057 (0.821 - 1.360)		1.248 (0.969 - 1.608)		1.087 (0.829 - 1.426)
Male: Knowledge of IPV laws		1.625*** (1.238 - 2.133)		1.148 (0.887 - 1.486)		0.735 (0.537 - 1.007)
Male: Reports high male involvement		1.982*** (1.449 - 2.710)		1.005 (0.691 - 1.461)		0.509*** (0.355 - 0.729)
Male: Reports couples' discussions (HIV)		0.900 (0.636 - 1.274)		0.903 (0.685 - 1.192)		0.966 (0.644 - 1.451)
Male: Reports couples' discussions (sex)		1.204 (0.822 - 1.762)		1.060 (0.790 - 1.422)		0.943 (0.616 - 1.442)
Male: Reports female decision-making		1.109 (0.829 - 1.485)		0.881 (0.672 - 1.155)		0.805 (0.570 - 1.137)
Observations	1,462	1,476	1,382	1,448	1,062	1,098

Notes: * significant at 5 percent level; ** significant at 1 percent level; *** significant at .1 percent level

Table 3: Predictors of discordant reporting for physical intimate partner violence

	(1)	(2)	(3)	(4)	(5)	(6)
	Discordance - wife only reporter compared to concordant reporter of IPV		Discordance - husband only reporter compared to concordant reporter of IPV		Discordance - husband only reporter compared to wife only reporter of IPV	
	Sample: Women long survey OR (CI)	Sample: Men long survey OR (CI)	Sample: Women long survey OR (CI)	Sample: Men long survey OR (CI)	Sample: Women long survey OR (CI)	Sample: Men long survey OR (CI)
Male education	1.089 (0.757 - 1.568)	0.924 (0.605 - 1.412)	0.979 (0.685 - 1.399)	1.022 (0.650 - 1.605)	0.946 (0.699 - 1.279)	1.091 (0.779 - 1.528)
Female education	1.067 (0.615 - 1.849)	1.065 (0.655 - 1.732)	0.678 (0.392 - 1.174)	1.047 (0.687 - 1.595)	0.700 (0.476 - 1.030)	1.002 (0.698 - 1.438)
Male over age 30	1.312 (0.844 - 2.040)	1.079 (0.586 - 1.987)	1.383 (0.873 - 2.190)	1.235 (0.702 - 2.173)	1.097 (0.712 - 1.691)	1.128 (0.711 - 1.790)
Female over age 30	1.457 (0.926 - 2.292)	1.667 (0.993 - 2.800)	1.492 (0.964 - 2.308)	1.046 (0.666 - 1.641)	1.034 (0.735 - 1.455)	0.704 (0.452 - 1.096)
Wealth index above median	1.630* (1.049 - 2.534)	0.858 (0.534 - 1.379)	1.269 (0.786 - 2.047)	0.739 (0.491 - 1.111)	0.777 (0.583 - 1.035)	0.809 (0.597 - 1.096)
Muslim	1.028 (0.646 - 1.638)	0.655 (0.389 - 1.106)	1.614* (1.090 - 2.391)	0.984 (0.575 - 1.684)	1.625* (1.122 - 2.353)	1.456* (1.024 - 2.070)
Female: IPV not justified	0.819 (0.516 - 1.300)		1.020 (0.618 - 1.684)		1.195 (0.865 - 1.653)	
Female: Support for equitable gender norms	1.170 (0.793 - 1.727)		1.764* (1.125 - 2.768)		1.479* (1.046 - 2.090)	
Female: Knowledge of IPV laws	1.082 (0.719 - 1.628)		0.869 (0.573 - 1.319)		0.843 (0.612 - 1.163)	
Female: Reports high male involvement	0.718 (0.263 - 1.961)		0.689 (0.295 - 1.611)		1.097 (0.429 - 2.804)	
Female: Reports couples' discussions (HIV)	1.146 (0.740 - 1.775)		1.582 (0.997 - 2.510)		1.278 (0.923 - 1.769)	
Female: Reports couples' discussions (sex)	1.006 (0.589 - 1.717)		1.149 (0.682 - 1.936)		1.116 (0.779 - 1.600)	
Female: Reports female decision-making	0.725 (0.480 - 1.095)		1.497* (1.012 - 2.216)		2.106*** (1.560 - 2.844)	
Male: IPV not justified		2.344*** (1.516 - 3.625)		1.045 (0.680 - 1.607)		0.406*** (0.294 - 0.560)
Male: Support for equitable gender norms		2.037**		1.295		0.667*

		(1.228 - 3.378)		(0.793 - 2.114)		(0.471 - 0.945)
Male: Knowledge of IPV laws		1.556* (1.014 - 2.390)		1.668* (1.058 - 2.629)		1.164 (0.798 - 1.699)
Male: Reports high male involvement		2.385 (0.892 - 6.380)		1.282 (0.520 - 3.165)		0.632 (0.377 - 1.061)
Male: Reports couples' discussions (HIV)		0.797 (0.451 - 1.409)		1.333 (0.731 - 2.431)		1.532 (0.963 - 2.438)
Male: Reports couples' discussions (sex)		1.354 (0.711 - 2.579)		0.781 (0.425 - 1.435)		0.633 (0.372 - 1.077)
Male: Reports Female decision-making		2.179** (1.309 - 3.625)		0.870 (0.538 - 1.406)		0.372*** (0.240 - 0.575)
Observations	534	494	526	544	778	756

Notes: * significant at 5 percent level; ** significant at 1 percent level; *** significant at .1 percent level

Table 4: Predictors of discordant reporting for sexual intimate partner violence

	(1)	(2)	(3)	(4)	(5)	(6)
	Discordance - wife only reporter compared to concordant reporter of IPV		Discordance - husband only reporter compared to concordant reporter of IPV		Discordance - husband only reporter compared to wife only reporter of IPV	
	Sample: Women long survey OR (CI)	Sample: Men long survey OR (CI)	Sample: Women long survey OR (CI)	Sample: Men long survey OR (CI)	Sample: Women long survey OR (CI)	Sample: Men long survey OR (CI)
Male education	0.897 (0.689 - 1.168)	0.937 (0.647 - 1.356)	1.027 (0.754 - 1.399)	1.096 (0.749 - 1.604)	1.112 (0.825 - 1.500)	1.198 (0.877 - 1.638)
Female education	1.109 (0.775 - 1.587)	1.107 (0.723 - 1.696)	0.775 (0.513 - 1.169)	1.225 (0.811 - 1.851)	0.693 (0.475 - 1.013)	1.074 (0.806 - 1.432)
Male over age 30	0.858 (0.601 - 1.225)	1.158 (0.827 - 1.621)	0.985 (0.631 - 1.537)	1.309 (0.855 - 2.005)	1.024 (0.705 - 1.487)	1.107 (0.746 - 1.643)
Female over age 30	1.441* (1.079 - 1.924)	1.024 (0.655 - 1.601)	1.450 (0.994 - 2.116)	0.985 (0.642 - 1.511)	1.138 (0.809 - 1.601)	0.835 (0.599 - 1.164)
Wealth index above median	1.046 (0.830 - 1.320)	1.342 (0.955 - 1.886)	0.694* (0.493 - 0.977)	1.103 (0.759 - 1.603)	0.730 (0.528 - 1.008)	0.852 (0.631 - 1.152)
Muslim	0.484*** (0.335 - 0.698)	0.881 (0.616 - 1.262)	0.670 (0.412 - 1.090)	0.765 (0.526 - 1.111)	1.219 (0.846 - 1.756)	0.938 (0.681 - 1.292)
Female: IPV not justified	0.868 (0.638 - 1.182)		1.400 (0.890 - 2.201)		1.711** (1.202 - 2.435)	
Female: Support for equitable gender norms	1.118 (0.795 - 1.571)		1.027 (0.683 - 1.546)		0.893 (0.607 - 1.313)	
Female: Knowledge of IPV laws	1.020 (0.764 - 1.361)		1.444* (1.044 - 1.998)		1.445** (1.134 - 1.842)	
Female: Reports high male involvement	1.201 (0.703 - 2.052)		1.031 (0.515 - 2.064)		0.971 (0.506 - 1.864)	
Female: Reports couples' discussions (HIV)	0.955 (0.720 - 1.266)		1.163 (0.831 - 1.627)		1.327 (0.962 - 1.830)	
Female: Reports couples' discussions (sex)	1.200 (0.881 - 1.634)		1.679** (1.138 - 2.478)		1.541** (1.113 - 2.136)	
Female: Reports Female decision-making	1.053 (0.799 - 1.388)		1.554* (1.028 - 2.350)		1.428* (1.047 - 1.947)	
Male: IPV not justified		1.558* (1.030 - 2.357)		0.886 (0.574 - 1.368)		0.547*** (0.416 - 0.718)

Male: Support for equitable gender norms		2.655*** (1.584 - 4.451)		1.148 (0.710 - 1.857)		0.461*** (0.316 - 0.672)
Male: Knowledge of IPV laws		2.069*** (1.469 - 2.914)		1.309 (0.969 - 1.767)		0.717* (0.531 - 0.968)
Male: Reports high male involvement		2.307** (1.323 - 4.022)		0.970 (0.445 - 2.114)		0.415** (0.243 - 0.710)
Male: Reports couples' discussions (HIV)		0.902 (0.580 - 1.402)		1.046 (0.749 - 1.460)		1.021 (0.674 - 1.545)
Male: Reports couples' discussions (sex)		1.803* (1.037 - 3.136)		0.805 (0.536 - 1.209)		0.488** (0.285 - 0.834)
Male: Reports Female decision-making		2.081** (1.299 - 3.335)		1.003 (0.692 - 1.455)		0.458*** (0.309 - 0.679)
Observations	1,051	759	664	688	1,031	969

Notes: * significant at 5 percent level; ** significant at 1 percent level; *** significant at .1 percent level

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