

# Coercive control and its associations with domestic violence and common mental disorders in a cross-sectional survey in informal settlements in Mumbai, India

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## Abstract

**Background:** Coercive control behaviours central to the abuse of power; appears more frequent than other types of domestic violence, but little is known about its frequency, features, and consequences for women in India.

**Objective:** We aimed to examine the prevalence of domestic coercive control and its association with physical, sexual, and emotional domestic violence in the preceding year and symptoms of depression, anxiety, and suicidal thinking.

**Methods:** In a cross-sectional survey, we interviewed 4906 ever-married women aged 18-49 years living in urban informal settlements in Mumbai, India. We developed a 24-item scale of coercive control, assessed physical, sexual, and emotional violence using existing questions, and screened for symptoms of depression with the Patient Health Questionnaire (PHQ9), anxiety with the Generalised Anxiety Disorder (GAD7) questionnaire, and suicidal thinking with questions developed by the World Health Organization. Estimates involved univariable and multivariable logistic regression models and the prediction of marginal effects.

**Results:** The prevalence of domestic coercive control was 71%. 23% of women reported domestic violence in the past 12 months (emotional 19%, physical 13%, sexual 4%). Adjusted models suggested that women exposed to controlling behaviour had greater odds of surviving emotional (aOR 2.1; 95% CI 1.7, 2.7), physical (1.4; 1.0, 1.9), and sexual (1.8; 1.1, 3.0) domestic violence in the past 12 months; and higher odds of a positive screen for moderate or severe depression (1.7; 1.3, 2.2), anxiety (2.1; 1.3, 3.1), and suicidal thinking (2.5; 1.8, 3.4), and increased with each additional indicator of coercive control behaviour. When women reported 24 indicators of coercive control, the adjusted predicted proportion with moderate or severe depressive symptoms was 60%, anxiety 42%, and suicidal thinking 17%.

**Conclusion:** Inclusion of coercive control in programs to support domestic violence, would broaden our understanding of domestic abuse to resemble most victims experience and improve interventions.

## **Keywords**

Coercive control; domestic violence; common mental disorder; depression; anxiety; suicidal thinking, urban informal settlements; Mumbai, India

## **Background**

Preventing domestic violence against women is a global imperative (UN Assembly, 2000). Beginning to address it involves an understanding that it is a constellation of behaviours, central to which is the abuse of power within the home (Pence & Paymar, 1986). Most research has focused on physical and sexual violence and, to a lesser degree, emotional and economic violence (Howard, Oram, Galley, Trevillion, & Feder, 2013; Kalokhe *et al.*, 2016). However, bound up with these forms of violence is controlling behaviour in which family members use threats and violence to assert power over the survivor (Pence & Paymar, 1986), who suffers negative consequences for non-compliance (Raven, Centers, & Rodrigues, 1975).

Coercive control involves abusers using a range of means to "hurt, humiliate, intimidate, exploit, isolate, and dominate their victims" (Stark, 2007). These include restricting or controlling movement and access to family, friends, neighbours, and broader social circles. Perpetrators often use gender norms to constrain women's mobility, time, spending, socialising, and diet. Women may, for example, be compelled to do household chores in a particular way or keep records of expenditure, the processes becoming normalised within gendered expectations to a point at which it is difficult to differentiate the coercive from the normative (Bishop & Bettinson, 2018). The environment reflects, entrenches, and exaggerates social and gender norms and women's subordinate position in society (Williamson, 2010), potentially to the extent that it is

not perceived as abusive. The tactics of coercive control are often interpreted as expressions of care, affection and love, rather than jealousy or proprietariness (Suarez, 1994; Dutton, Goodman, & Schmidt, 2006; Beck & Raghavan, 2010; Wolford-Clevenger *et al.*, 2017; Stark. & Hester, 2019).

Although survivors may not consider coercive controlling behaviour to be abuse (Richardson, Nandi, Jaswal, & Harper, 2020), it is more frequent than other types of domestic violence (Kelly & Johnson, 2008). Across countries, between 21% and 90% of women have experienced controlling behaviour from a partner (Graham-Kevan & Archer, 2003; García-Moreno, Jansen, Ellsberg, Heise, & Watts, 2005; Johnson, 2006; Krantz & Vung, 2009; Antai, 2011; Mandal & Hindin, 2013; Sapkota, Bhattarai, Baral, & Pokharel, 2016). Such behaviour is not limited to specific conflicts or situations. It often manifests early in a relationship and escalates over time (Hardesty *et al.*, 2015; Crossman, Hardesty, & Raffaelli, 2016). Most—but not all—cases include other forms of abuse such as physical or sexual violence (Lischick, 2000; Anderson, 2008). Studies suggested that coercive control can precede, motivate, or increase the likelihood of other types of violence in relationships (O'Leary, Malone, & Tyree, 1994; Graham-Kevan & Archer, 2003; Antai, 2011; Dalal & Lindqvist, 2012; Stark, 2012; Howard, Oram, Galley, Trevillion, & Feder, 2013; Hardesty *et al.*, 2015; Aizpurua, Copp, Ricarte, & Vázquez, 2017), particularly when controlling behaviour does not achieve the desired effect (Tanha, Beck, Figueredo, & Raghavan, 2010). There is evidence from studies in India and elsewhere that partners who use coercive control are between three and eight times more likely to perpetrate physical or sexual violence than partners who use physical violence alone (Kelly & Johnson, 2008; Mukherjee & Joshi, 2019; Ram *et al.*, 2019), and that cases involving coercive control are

more likely to result in serious harm than cases that involve discrete acts of physical violence (Campbell *et al.*, 2003; Stark, 2007; Dobash & Dobash, 2015; Myhill & Hohl, 2019).

Coercive control appears to be common in India, affecting approximately 50% of women of reproductive age (IIPS 2017; Mukherjee & Joshi, 2019; Richardson, Nandi, Jaswal, & Harper, 2020). The prevalence estimated from the fourth National Family Health Survey (NFHS-4) was higher in rural than in urban areas and among women with less education and poorer socioeconomic position. Women who reported more instances of controlling behaviour reported higher rates of emotional (54% compared with 5%), physical (64% compared with 17%), and sexual violence (30% compared with 2%) than women who did not.

Coercive control harms mental health (Follingstad, Rutledge, Berg, Hause, & Polek, 1990; Tolman, 1992). A range of symptoms has been described (Follingstad, Brennan, Hause, Polek, & Rutledge, 1991; Dutton, Haywood, & El-Bayoumi, 1997), including distress (Richardson, Nandi, Jaswal, & Harper, 2020) and common mental disorders such as anxiety and depression (Bergman & Brismar, 1991; Abbott, Johnson, Koziol-McLain, & Lowenstein, 1995; Dutton, Goodman, & Bennett, 1999; Williamson, 2010; Leone, 2011; Wolford-Clevenger *et al.*, 2017; Richardson, Nandi, Jaswal, & Harper, 2020).

In a population of women living in informal settlements in Mumbai, India, our objectives were to examine (1) the prevalence of coercive control, (2) its associations with other forms of domestic violence, and (3) its relationship with depression, anxiety, and suicidal thinking.

## **Methods**

### **Setting**

The non-government organisation SNEHA (Society for Nutrition, Education and Health Action) has run a program focusing on primary, secondary, and tertiary prevention of violence for 20 years in informal settlements in Mumbai (Daruwalla *et al.*, 2019).

### **Design**

We used data from a survey done before implementing a community-based intervention to prevent violence against women. The cross-sectional systematic random sample survey included 50 clusters of equal size (~100 respondents from ~500 residential households) in two sizeable informal settlement areas.

### **Participants**

The dataset included ever-married women aged 18-49 years, interviewed in a survey designed to understand domestic violence perpetrated by intimate partners and other family members.

### **Data Collection**

We followed WHO guidelines for research on domestic violence against women (WHO, 2012) and on sexual violence (Initiative, Jewkes, Dartnall, & Sikweyiya, 2012). Details of data collection are available elsewhere (Daruwalla, Kanougiya, Gupta, Gram, & Osrin, 2020).

Briefly, 16 women interviewers with graduate education and three months of training mapped the study areas and visited households to enumerate residents and list potential respondents.

From a random starting point in each cluster, alternate households were selected without replacement until we had collected information from 100 women aged 18-49 years (Daruwalla, Kanougiya, Gupta, Gram, & Osrin, 2020). When more than one potential respondent was available in a household, an algorithm led the investigators to select the youngest disabled,

youngest married, or youngest unmarried woman. Interviews were arranged in advance to maintain privacy, with a provision for up to three repeat visits. Participants were given a participant information sheet, discussed the nature of the interview and right to withdraw, and gave signed consent. The interview protocols included safety assessment, counselling, liaison with healthcare, police, and legal services, and developing follow-up plans for the survivor and her family (all of these with permission from the survivor). Interviewers used electronic tablets to enter information in a database in CommCare ([www.dimagi.com](http://www.dimagi.com)).

## **Variables**

### ***Exposure: Coercive Controlling Behaviour***

Measures of coercive control have not yet been validated in India (Kirkwood, 1993; Dutton, Goodman, & Schmidt, 2006; Beck & Raghavan, 2010; Tanha, Beck, Figueredo, & Raghavan, 2010), and questionnaires about psychological abuse do not differentiate coercive control from the psychological abuse clearly (Pence & Paymar, 1986; Straus, Hamby, Boney-McCoy, & Sugarman, 1996; Dutton, Goodman, & Schmidt, 2006; DeKeseredy & Schwartz, 2011; Myhill, 2015). We developed a 24-item domestic coercive control questionnaire based on programme experience supporting violence survivors, augmented by four focus group discussions with counsellors, community actors, and lawyers. We generated binary *yes/no* responses to each item for the analysis. In terms of numbers of different tactics rather than frequency, we described domestic coercive control intensity in a summative variable with values from 0 to 24.

### ***Outcomes***

Participants were screened for symptoms suggestive of depression with the Patient Health Questionnaire 9 (PHQ-9) (Kroenke, Spitzer, & Williams, 2001) and symptoms suggestive of anxiety with the Generalised Anxiety Disorder 7 (GAD-7) (Spitzer, Kroenke, Williams, & Löwe,

2006; Löwe *et al.*, 2008), each referring to the last two weeks. Items were coded 0 (*not at all*), 1 (*several days*), 2 (*more than half the days*), or 3 (*nearly every day*). PHQ-9 scores of 10-27 were taken as suggesting moderate or severe depression (Löwe *et al.*, 2004), and GAD-7 scores of 10-21 moderate or severe anxiety. We used binary variables to describe these outcomes in the analysis. Suicidal thinking was assessed with the question, "In the past 12 months, did you ever consider attempting suicide?" (McKinnon, Gariépy, Sentenac, & Elgar, 2016).

The selection of questions to describe emotional, physical, and sexual abuse by an intimate partner or other family member is described elsewhere (Daruwalla, Kanougiya, Gupta, Gram, & Osrin, 2020). Emotional violence was described by five questions, physical violence by nine, and sexual violence by four. Women's affirmative response to any of these questions—lifetime or past year—was described by binary composite variables for physical violence, sexual violence, and emotional violence.

Marital status was described by a categorical variable distinguishing married respondents from respondents who had been widowed, separated, or divorced. Socioeconomic position was described by quintiles of a standardised score derived from the first component of a principal components analysis of the ownership of 22 assets (Filmer & Pritchett, 2001; Vyas & Kumaranayake, 2006).

Cronbach's alpha indicated internal consistency for the PHQ-9 ( $\alpha$  0.86), GAD-7 ( $\alpha$  0.84), nine items on physical abuse ( $\alpha$  0.83), four items on sexual abuse ( $\alpha$  0.76), five items on emotional abuse ( $\alpha$  0.82), and 24 items on coercive control ( $\alpha$  0.80).

### **Statistical Analysis**

We tabulated frequencies and proportions of demographic and socioeconomic variables, responses to questions about coercive control, the experience of physical, sexual, and emotional



violence, depression, anxiety, and suicidal thinking. Associations between coercive control and other forms of violence were examined by cross-tabulation, followed by univariable and multivariable logistic regression models. We examined the association of coercive control (determinant) with moderate or severe depression, moderate or severe anxiety, and suicidal thinking in the last 12 months (outcomes) in a series of univariable and multivariable logistic regression models. We computed unadjusted and two adjusted models: the first multivariable logistic regression model (aOR1) was adjusted for respondent age, education, religion, caste, asset quintile, respondent and husband employment, and respondent and husband drug or alcohol use. The second model (aOR2) was adjusted for other domestic violence forms, and the first model variables (aOR1).

We did two additional analyses. First, we examined the effect of increasing numbers of positive responses to coercive control questions on moderate or severe depression, moderate or severe anxiety, and suicidal thinking in the last 12 months. We adjusted the logistic regression models in the same way as above and then predicted marginal effects and modelled the log-odds of common mental disorder as a step function from 0 to 1 act of control, followed by a linear increase from 1 to 24 acts. We tested for non-linearity by fitting a quadratic term for the increase from 1 to 24.

Second, we analysed possible coercive control sources: either intimate partner or other marital family members. Of the 24 items in our questionnaire, 16 that made this distinction were available. We replicated the analyses described above using this smaller number of coercive control indicators, recategorising the exposure, and allowing for effect modification: *by an intimate partner, by a marital family member, or by both*. All estimates accounted for survey

design, with the cluster as the primary sampling unit, four larger areas as strata, and standard errors estimated by Taylor linearisation using *svy* commands in STATA 15.0 (StataCorp LLC).

### **Ethical Considerations**

Ethical approval was granted by the UCL Research Ethics Committee (3546/003, 27/09/2017) and by PUKAR (Partners for Urban Knowledge, Action, and Research) Institutional Ethics Committee (25/12/2017). The trial before which the data were collected is registered with the Controlled Trials Registry of India (CTRI/2018/02/012047) and ISRCTN (ISRCTN84502355).

### **Results**

**Table 1** summarises the characteristics of ever-married women respondents. Around 19% had no schooling, and 38% had reached middle school. A quarter of women were in remunerated work—although 20% of them earned less than INR 12,000 a year (USD 163)—and 98% of their partners were in remunerated work with a mean annual income of INR 172,383 (USD 2335). More than half identified as Hindu and of general caste. 12% said that they used alcohol or drugs, compared with 44% of their husbands.

**Table 2** summarises the prevalence of coercive controlling behaviour, domestic violence, and selected common mental disorders. Overall, 71% of women reported experiencing at least one of the 24 control items. The commonest were that their socialisation, mobility, and access to resources were restricted. Forms of violence other than coercive control were also common: 23% reported domestic violence in the last year, of which the commonest was emotional. Overall, 9% of women screened positive for moderate or severe depressive symptoms on the PHQ-9, 6% for anxiety on the GAD-7, and 6% reported suicidal thinking in the last year.

**Table 3** shows coercive control associations with emotional, physical, and sexual domestic violence and coercive control with positive screens for depression, anxiety, and reported suicidal thinking. Crude and both adjusted logistic regression models suggested that women who reported coercive control had greater odds of experiencing emotional (adjusted odds ratio 2: 2.1; 95% CI 1.7, 2.7), physical (1.4; 1.0, 1.9), and sexual (1.8; 1.1, 3.0) violence in the last 12 months. Adjusted models suggested that reported coercive control was associated with greater odds of a positive screen for moderate or severe depression (aOR2 1.7; 1.3, 2.2), independently of the three other forms of domestic violence. Similar findings were seen to associate reported coercive control with a positive screen for moderate or severe depression (aOR2 2.1; 1.3, 3.1) and suicidal thinking (aOR2 1.7; 1.2, 2.3). Emotional violence independently increased the odds of a positive screen for depression, anxiety, or suicidal thinking three-to-four-fold.

**Figure 1** shows the effects of coercive control on depression, anxiety, and suicidal thinking based on conditional logistic regression models. For each outcome, predicted marginal effects are presented for three models: crude, adjusted with sociodemographic covariates, and adjusted with both sociodemographic covariates and covariates describing the other three forms of violence. The fully adjusted model showed that, in the absence of coercive behaviour, the predicted proportion of women with depression was 6%, with anxiety 3%, and with suicidal thinking 4%. These proportions increased for each additional indicator of coercive control that women reported. When women reported 24 indicators of coercive controlling behaviour, the predicted proportion with depression was 94% (60% in the second adjusted model), with anxiety 90% (42%), and with suicidal thinking 80% (17%).

We repeated the analysis to distinguish between coercive control by an intimate partner or another marital family member. In this case, the variable describing coercive control was based

on 16 questions rather than 24. The odds of a positive screen for moderate or severe depression or anxiety were higher when coercive control was exercised by an intimate partner (aOR2 2.8; 95% CI 2.0, 4.0 for depression, 2.5; 1.5, 4.0 for anxiety) rather than by a marital family member (1.8; 1.3, 2.5 for depression, 1.7; 1.1, 2.7 for anxiety). They were greatest when respondents reported that coercive control came from an intimate partner and marital family: aOR2 2.8 (95% CI 2.0, 3.9) for depression and 2.8 (1.7, 4.6) for anxiety.

### **Discussion**

In a survey of over 4000 ever-married women aged 18-49 years in informal settlements in Mumbai, 71% reported at least one form of domestic coercive control. Emotional, physical, or sexual domestic violence appeared to increase the odds of such coercive control. Domestic coercive control was independently associated with doubling the odds of positive screens for moderate or severe depression, moderate or severe anxiety, and suicidal thinking. The odds of these increased with each additional form of coercive control a woman reported. The impact of domestic coercive control on other forms of domestic violence was of similar magnitude to the impacts of physical and sexual violence but less than that of emotional violence. Coercive control by an intimate partner appeared to have a more substantial influence on depression and anxiety than control by a marital family member.

Coercive control is a critical element of domestic violence. It makes possible, legitimises, and reinforces other forms of violence by limiting women's access to resources, harming their self-esteem, self-efficacy, and mental health, and isolating them or reducing their social support (Thompson, Kaslow, Short, & Wyckoff, 2002; Stark, 2007; Sowislo & Orth, 2013). Our results align with the feminist view that spouses commonly use controlling behaviour to subjugate women (Yllo, 1993; McPhail, Busch, Kulkarni, & Rice, 2007; Ali & Naylor, 2013).

At 72%, the prevalence of coercive control in our study was high. Two possible reasons for this—apart from its ubiquity—are that we captured control by intimate partners and marital family members and that asking questions about specific behaviours might be more likely to elicit positive responses than asking more generally about something that might not be thought of as abusive in a situation in which it accords with gender norms.

The association of coercive control with emotional, physical, and sexual violence in the past year was consistent with other studies (Gage & Hutchinson, 2006; Krantz & Vung, 2009; Dalal & Lindqvist, 2012; Mandal & Hindin, 2013; Donta, Nair, Begum, & Prakasam, 2016; Aizpurua, Copp, Ricarte, & Vázquez, 2017; Biswas, Rahman, Kabir, & Raihan, 2017; Mukherjee & Joshi, 2019; Ram *et al.*, 2019). Links between intimate partner violence and various socially controlling behaviours have been found cross-culturally (Russo & Pirlott, 2006), and the risk of violence has been described as increasing with the number of controlling behaviours across diverse cultures (Kishor & Johnson, 2004). Representative studies from Thailand, Nepal, Nigeria and Turkey have found that marital control by husbands increased the likelihood of spousal violence (Antai, 2011; Yüksel-Kaptanoğlu, Türkyılmaz, & Heise, 2012; Chuemchit *et al.*, 2018; Gautam & Jeong, 2019). Studies in England and the USA found that emotional abuse and marital controlling behaviour were risk factors for physical and sexual intimate partner violence (Hamby & Sugarman, 1999; Felson & Messner, 2000).

A second important finding was that coercive control was associated independently with mental health concerns (Bergman & Brismar, 1991; Abbott, Johnson, Koziol-McLain, & Lowenstein, 1995; Frye, Manganello, Campbell, Walton-Moss, & Wilt, 2006; Leone, 2011; Wolford-Clevenger, Vann, & Smith, 2016; Wolford-Clevenger & Smith, 2017). It effectively doubled the odds of depression, anxiety, and suicidal thinking, the odds increasing with each additional item

in a way generally consistent with previous studies in India (Ahuja *et al.*, 2000; Varma, Chandra, Thomas, & Carey, 2007; Vachher & Sharma, 2010; Nur, 2012; Stephenson, Winter, & Hindin, 2013; Indu *et al.*, 2020). Coercive control targets the survivor's autonomy, equality, liberty, social support, and dignity in ways that compromise her capacity for independent, self-interested decision-making vital to escape or resist (Stark, 2012). Constraining a woman's social networks and using psychologically abusive tactics harms her physical and psychological well-being and wears down her will and ability to resist. Separation from family and friends may create a sense of futility and despair. When resistance is lower, compliance with coercive demands may be more likely since there are fewer resources to combat the pressure to comply (Dutton, Goodman, & Schmidt, 2006; Stark, 2012). This constrained daily life experience increases the risk of severe injury (Stark, 2007) and contributes to harms to mental health that may be more than those caused by physical violence (Wolford-Clevenger *et al.*, 2017; Daruwalla, Kanougiya, Gupta, Gram, & Osrin, 2020).

### **Policy implications**

Our focus on coercive control does not imply that the other forms of violence are unimportant. It is part of a matrix of abuse (Myhill & Hohl, 2019). Offenders can subjugate and entrap victims without the use of physical violence, recognising that their controlling tactics will not be taken seriously (Hester & Westmarland, 2006). Controlling tactics, however, predict a range of harms, including sexual, physical and fatal violence, better than prior assault (Glass, Manganello, & Campbell, 2004; Beck & Raghavan, 2010). Adopting the coercive control model would broaden our understanding of partner abuse to resemble most victims' experience and improve intervention closely. There is enough evidence that the harms of coercive control are as devastating as physical and sexual violence; what is lacking is recognition in legal and healthcare

systems. It is possible that advocacy might encourage a legal view of coercive control as a “liberty crime” (Johnson, 2006; Stark, 2007).

### **Limitations**

We asked 24 questions designed to describe a spectrum of coercive controlling behaviours, and, for this reason, our findings are not directly comparable with those of other studies. Similar forms of restriction, isolation, and control are recognised as abusive by women in many countries (Stark, 2009; Butterworth & Westmarland, 2015; Hester, Jones, Williamson, Fahmy, & Feder, 2017), and we used many similar questions (Dutton, Goodman, & Schmidt, 2006; Beck & Raghavan, 2010; Williamson, 2010; Dalal & Lindqvist, 2012; Wolford-Clevenger *et al.*, 2017; Mukherjee & Joshi, 2019; Stark. & Hester, 2019). The cross-sectional study design means that we are unable to make causal inferences. Of particular note is the (probably) bidirectional relationship between forms of domestic violence and mental health. We cannot say whether domestic violence was the cause or effect of disturbed mental health. Nor did our models include information on the mental health of intimate partners or other family members. Informal settlements may themselves influence the risk of domestic violence and poor mental health in ways we were unable to adjust.

### **Conclusion**

Our study considered coercive control as part of the spectrum of domestic violence in low-income settings. It contributes to the disproportionately small evidence base from low- or middle-income settings and considers violence by intimate partners and other family members. Coercive control appears to be an essential component of domestic violence and an independent risk factor for depression, anxiety, and suicidal thinking. It needs to be recognised by both policymakers and practitioners as a central feature of domestic violence. Understandably, the

current focus is on physical and sexual violence, but this needs to expand to consider the controlling behaviours that are often apparent before the physical injury.

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### Tables and Figures

Table 1. Characteristics of 4906 Ever-married Women Respondents in Informal Settlements in Mumbai, India

<b>Marital status</b>	(n)	(%)
Currently married	4694	(96)
Widowed/Separated/Divorced	212	(4)
<b>Respondent age (in complete years)</b>		
18-25 y	1025	(21)
26-30 y	1421	(29)
31-36 y	1172	(24)
37-49 y	1288	(26)
<b>Respondent education</b>		
No education	938	(19)
Primary 1-5 y	846	(17)
Middle 6-8 y	1099	(22)
High 9-10 y	1105	(23)
Senior 11-12 y	533	(11)
Above 12 y	385	(8)
<b>Respondent employed</b>	1182	(24)
<b>Respondent monthly income, INR</b>		
<1000	233	(20)

1000-2999	303	(27)
3000-5999	279	(25)
6000+	322	(28)
<b>Respondent uses alcohol or drugs</b>	612	(12)
<b>Husband age</b>		
18-19 y	14	(<1)
20-29 y	917	(19)
30-39 y	2102	(44)
40-49 y	1370	(29)
50+ y	391	(8)
<b>Husband employed</b>	4686	(98)
<b>Husband monthly income, INR</b>		
<10,000	1095	(23)
10,000-11,999	997	(21)
12,000-14,999	652	(14)
15,000+	1942	(41)
<b>Husband uses alcohol or drugs</b>	2100	(44)
<b>Housing type</b>		
Kachha	336	(7)
Pukka	2518	(51)
Mixed	2052	(42)
<b>Toilet type</b>		
Private	836	(17)
Public	4368	(82)
Open defecation	2	(<1)
<b>Religion</b>		
Hindu	1826	(37)
Muslim	2882	(59)
Other	198	(4)
<b>Caste</b>		
General	2854	(58)
OBC	1180	(24)

ST/SC	872	(18)
<b>Socio-economic quintile</b>		
1 poorest	969	(21)
2	936	(20)
3	934	(20)
4	933	(20)
5 least poor	935	(20)
<b>All</b>	<b>4906</b>	<b>(100)</b>

Table 2. Prevalence of Coercive Controlling Behaviour, Domestic Violence, and Common Mental Disorders among 4906 Ever-married Women Respondents in Informal Settlements in Mumbai, India

	(n)	(%)
<b>Coercive control behaviour always (Any)</b>	<b>3465</b>	<b>(71)</b>
Dress or hairstyle dictated by others	256	(5)
Excluded from family matters	357	(7)
Needs permission for healthcare	711	(14)
Limited access to household areas	168	(3)
Forced out of house	162	(3)
Locked in house	37	(1)
Prevented from attending meetings	220	(4)
Movement monitored	386	(8)
Prevented from seeking employment	825	(17)
Coerced to seek employment	76	(2)
Prevented from schooling	148	(3)
Given excessive work	236	(5)
Coerced to use contraception	15	(<1)
Prevented from using contraception	52	(1)
Prevented from terminating pregnancy	37	(1)
Coerced to terminate pregnancy	14	(<1)
Never free to talk on phone	638	(13)
Never free to speak	501	(10)
Needs permission to go out	1245	(25)
Accompanied when out	510	(10)
Never allowed out in evening	652	(13)
Can never meet female friends	488	(10)
Can never meet male friends/acquaintances	2388	(49)
Can never meet natal family	249	(5)
<b>Any Domestic Violence in Last 12 Months</b>	<b>1104</b>	<b>(23)</b>
Physical violence	618	(13)
Sexual violence	186	(4)
Emotional violence	927	(19)



<b>Any domestic violence (lifetime)</b>	<b>1877</b>	<b>(38)</b>
Physical violence	1243	(25)
Sexual violence	285	(6)
Emotional violence	1553	(32)
<b>Common Mental Disorders</b>		
Moderate or severe depression on PHQ-9	443	(9)
Moderate or severe anxiety on GAD-7	299	(6)
Suicidal thinking in last 12 months	318	(6)
<b>All</b>	<b>4906</b>	<b>(100)</b>

PHQ-9: Patient Health Questionnaire 9-question screen. GAD-7: Generalised Anxiety Disorder 7-question screen.

Table 3. Coercive Control Behaviour Association with other forms of Domestic Violence, Depression, Anxiety, and Suicidal thinking among 4906 Ever-married Women Respondents in Informal Settlements in Mumbai, India

	No	(%)	Yes	(%)	OR [95% CI]	OR <sub>1</sub> [95% CI]	OR <sub>2</sub> [95% % CI]
<b>Coercive Control Behaviour (Always)</b>							
Emotional violence in the last 12 months							
No	1296	(33)	268 3	(67)	1	1	1
Yes	145	(16)	782	(84)	2.6 [2.2 , 3.1]	2.6 [2.12 , 3.21]	2.1 [1.7 , 2.7]
Physical violence in the last 12 months							
No	1347	(31)	294 1	(69)	1	1	1
Yes	94	(15)	524	(85)	2.6 [1.9 , 3.4]	2.4 [1.81 , 3.18]	1.4 [1.0 , 1.9]
Sexual violence in the last 12 months							

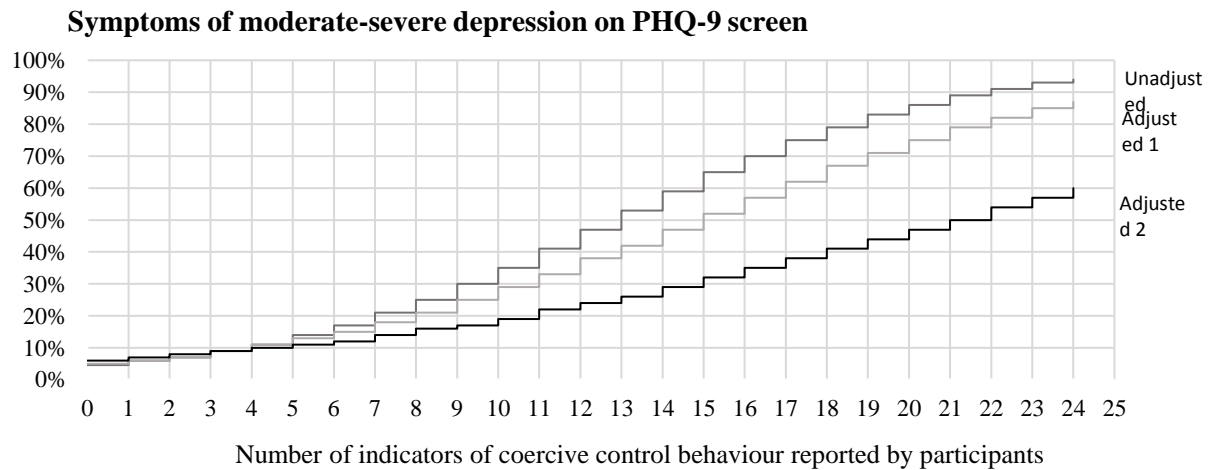
No	1421	(30)	329 9	(70)	1	1	1
Yes	20	(20)	166	(89)	3.6 [2.2 , 5.8]	3.1 [1.90 , 5.02]	1.8 [1.1 , 3.0]
<b>Moderate or Severe Depression on PHQ-9</b>							
Coercive Control Behaviour (Always)							
No	1368	(95)	73	(5)	1	1	1
Yes	3095	(89)	370	(11)	2.2 [1.8 , 2.8]	2.2 [1.8 , 2.9]	1.7 [1.3 , 2.2]
Emotional Violence in Last 12 m							
No	3759	(94)	220	(6)	1	1	1
Yes	704	(76)	223	(24)	5.4 [4.4 , 6.7]	4.8 [3.9 , 6.0]	3.3 [2.5 , 4.3]
Physical Violence in last 12 m							
No	3996	(93)	292	(7)	1	1	1
Yes	467	(76)	151	(24)	4.4 [3.5 , 5.6]	4.0 [ 3.1 , 5.2]	1.5 [1.1 , 2.1]
Sexual Violence in last 12 m							
No	4336	(92)	384	(8)	1	1	1
Yes	127	(68)	59	(32)	5.3 [3.8 , 7.3]	4.5 [3.1 , 6.5]	1.8 [1.3 , 2.7]
<b>Moderate or Severe Anxiety on GAD-7</b>							
Coercive Control Behaviour (Always)							
No	1400	(97)	41	(3)	1	1	1
Yes	3207	(93)	258	(7)	2.8 [1.9 , 4.0]	2.7 [1.8 , 4.1]	2.1 [1.3 , 3.1]

Emotional Violence in last 12 m								
No	3843	(97)	136	(3)	1	1	1	3.6
Yes	764	(82)	163	(13)	6.0 [4.6 , 7.9]	5.5 [ 4.1 , 7.4]		[2.6 , 5.0]
Physical Violence in last 12 m								
No	4099	(96)	189	(4)	1	1	1	1.5
Yes	508	(82)	110	(18)	4.7 [3.6 , 6.2]	4.5 [ 3.3 , 6.1]		[1.1 , 2.2]
Sexual Violence in last 12 m								
No	4465	(95)	255	(5)	1	1	1	1.9
Yes	142	(76)	44	(24)	5.4 [3.7 , 8.0]	4.9 [ 3.1 , 7.8]		[1.2 , 3.1]
<b>Suicidal thinking in last 12 m</b>								
Coercive Control Behaviour (Always)								
No	1395	(97)	46	(3)	1	1	1	1.7
Yes	3193	(92)	272	(8)	2.6 [1.9 , 3.6]	2.5 [1.8 , 3.4]		[1.2 , 2.3]
Emotional Violence in last 12 m								
No	3849	(97)	130	(3)	1	1	1	3.4
Yes	739	(80)	188	(20)	7.5 [5.9 , 9.6]	6.8 [5.3 , 8.8]		[2.3 , 5.1]
Physical Violence in last 12 m								
No	4119	(96)	169	(4)	1	1	1	2.5
Yes	469	(76)	149	(24)	7.7 [5.9 , 10.1]	6.8 [5.0 , 9.1]		[1.6

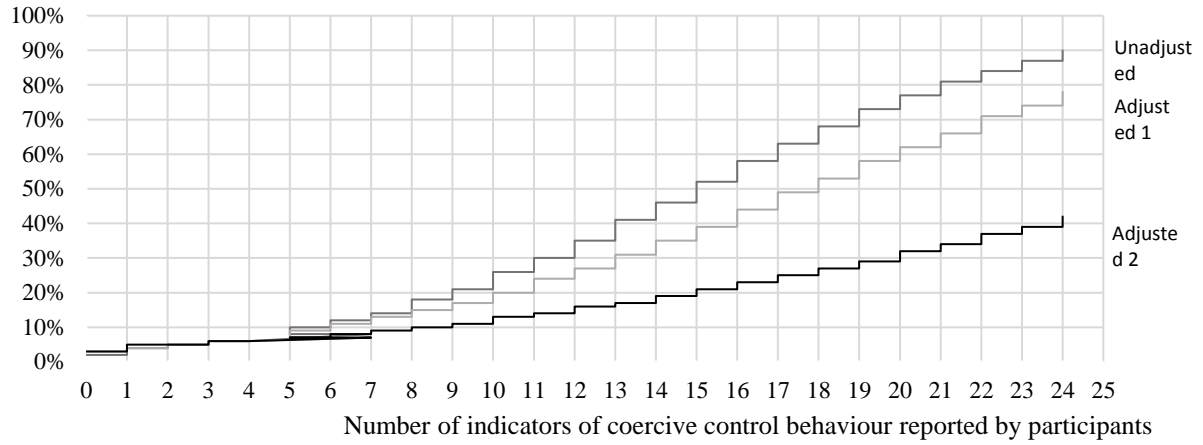
								3.8]
Sexual Violence in last 12 m								
No	4461	(95)	259	(5)	1		1	1
Yes	127	(68)	59	(32)	8.0 [5.6 , 11.4]		6.5 [4.4 , 9.6]	2.2 [1.4 , 3.3]

PHQ-9: Patient Health Questionnaire 9-question screen. GAD-7: Generalised Anxiety Disorder 7-question screen. OR: crude odds ratio. aOR<sub>1</sub>: odds ratio adjusted with covariates for respondent age, education, religion, caste, socioeconomic quintile, respondent and husband employment, respondent and husband drug or alcohol use. aOR<sub>2</sub>: odds ratio adjusted as aOR<sub>1</sub> plus covariates for emotional, physical, and sexual violence.

Figure1. Proportion of women with moderate-severe depression on PHQ-9 screen, moderate-severe anxiety on GAD-7 screen, or suicidal thoughts or action, conditional on experience of 0-24 forms of coercive control behaviour.



### Symptoms of moderate-severe depression on GAD-7 screen



### Suicidal thoughts or action

