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Wives without husbands: Gendered vulnerability to sexually transmitted infections among previously married women in India

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Abstract

Using population-based and family structural data from a high HIV-prevalence district of southern India, this paper considers four suggested social scenarios used to explain the positive correlation between HIV prevalence and previously married status among Indian women: I) infection from and then bereavement of an infected husband; II) abandonment after husbands learn of their wives' HIV status; III) economic instability after becoming previously married, leading women to seek financial support through male partners; IV) the social status of being previously married exposing women to sexual harassment and predation. By also considering seroprevalence of two other common sexually transmitted infections (STI), herpes and syphilis, in a combined variable with HIV, we limit the likelihood of the first two scenarios accounting for the greater part of this correlation. Through a nuanced analysis of household residences patterns (family structure), standard of living and education, we also limit the probability that scenario three explains a greater portion of the correlation. Scenario four emerges as the most likely explanation for this correlation, recognizing that other scenarios are also possible. Further, the interdisciplinary literature on the social position of previously married women in India strongly supports the suggestion that, as a population, previously married women are sexually vulnerable in India. Previously married status as an STI risk factor requires further biosocial research and warrants concentrated public health attention.

Keywords

Gender; health disparities; STI/HIV prevalence; India

Introduction

Married women's risk of contracting STIs from their husbands in India has received widespread consideration (Gangakhedar et al., 1997; Newmann et al., 2000; Schensul et al.,

2006; Solomon, Mehta, Latimore, Srikrishnan & Celentano, 2010). However, in India, widowed, divorced and separated (previously married) women are burdened with a higher prevalence of HIV infection when compared with married women (Becker et al., 2007; Dandona et al., 2008). Being previously married is one of the few known associations with HIV infection among the general population of Indian women, yet epidemiologic analyses focusing on previously married women as a socially distinguishable group are limited, and public health interventions for previously married women are non-existent.

Becker et al. (2007) and Bowen et al. (2010), together forward four possible explanations as to why previously married status is associated with increased HIV infection among women:

- I.** Having infected them, their husbands die leaving them widowed
- II.** Learning of their wives' HIV status, their husbands abandon them
- III.** After losing their husbands, previously married women who lack sufficient means of support recruit male sex partners for potential financial help
- IV.** In India, previously married women constitute a marginalized social group that finds itself vulnerable to sexual exploitation which directly increases STI prevalence among them.

Scenarios I and II entail that the encounter through which these women acquired their HIV infection preceded their change in marital status. Scenarios III and IV entail that the encounter through which these women acquired their HIV infection followed their change in marital status.

We would expect to find that if scenarios I and II (being widowed by an HIV infected husband or being abandoned by their husbands as a result of the women's HIV status) account for a significantly higher percentage of the previously married women who are HIV infected, that this effect would be diluted in an analysis that combines less deadly and less stigmatized sexually transmitted infections (STIs) such as herpes simplex virus type 2 (HSV-2) and syphilis together with HIV 1/2 into a single outcome variable of STI infection.

While scenario III (previously married women recruiting male partners for their potential economic contributions) can be thought to include an element of coercion in the sense that economic need constitutes systemic coercion, the primary difference between scenarios III and IV (previously married women as a group being sexually targeted) is that of agency: previously married women actively seeking multiple partners for financial gain as opposed to men actively coercing previously married women into sexual relationships from which the women may or may not benefit.

Researchers working among sex workers in India are familiar with many women who mark their entry into sex work at the time of losing or being abandoned by their husbands while simultaneously lacking adequate help from other relatives and needing to find a means to support themselves and their dependents without the benefit of much education or employable skills (Bowen et al., 2010; Dandona et al., 2006). Previously married women who upon facing similar familial circumstances as some women who become sex workers choose not to enter sex work may still find that romantic relationships can provide a secondary or tertiary means of economic support. Among many others, Kapadia (1968), Kolenda (1987), Patel (2005), Orenstein (1996), Reading (1996) and Schlesinger (1961) underscore the centrality of the family structure to Indian sociality. Within a society where residence with immediate family constitutes an important social marker, a nuanced comparison of family residence patterns affecting previously married women can provide a rough index of a woman's support, surveillance and cultural consonance (see Kumar,

Dandona, Prem Kumar & Dandona [2011] regarding the effect of familial surveillance on female sexual behaviors). Thus, we expect to find that if scenario III accounts for a higher percentage of HIV cases among previously married women, that poorer, less educated previously married women living by themselves or alone with their dependent children (that is, with little support from their relatives and thereby more economically vulnerable) will bear a greater proportion of STI prevalence than previously married women who live with their relatives.

Anthropologists and sociologists have consistently highlighted the deep vulnerability of women who lose their husbands in India (*e.g.* Amato, 1994; Lamb, 2000; Mehta, 1975; Minturn, 1993; Pothan, 1986). If scenario IV accounts for a higher percentage of HIV cases among previously married women, we would expect to find that within an analysis of only previously married women other variables tend to lose significance, indicating that the *status* of being widowed, divorced or separated per se accounts for the bulk of the higher prevalence of HIV among these women.

According to the National AIDS Control Organization (2011), Andhra Pradesh is the Indian state with the highest number of HIV infected individuals. Dandona et al. (2006) found an adjusted HIV prevalence of 1.70% (1.36–2.04%) among women in Guntur, a high HIV prevalence district in coastal Andhra Pradesh. Among this same sample of women in Guntur district, Schneider et al. (2010) found an adjusted HSV-2 seroprevalence rate of 7.07% and an adjusted syphilis seroprevalence rate of 1.42%. Using data from this large population-based survey in this district (Dandona et al., 2006; Dandona et al., 2008; Schneider et al., 2010), the present paper first makes a descriptive exploration of the category of previously married women in this area. Then, using demographic and new family structure data, this paper compares the likely usefulness of the above four explanations regarding the higher prevalence of HIV infection associated with previously married women. We compare these possible social “etiologies” with an eye to prompting the development of informed and relevant STI interventions among this segment of the Indian population.

Data and Methods

Sample Collection

The study population, sampling strategy, field procedures, survey and biomarker data have been described by Dandona et al. (2006 and 2008) and Schneider et al. (2010). In brief, the sample was drawn in 2005 and included 6967 women. Field investigators collected individual blood samples, socio-demographic data on family units, and self-reported answers to interview questions on sexual behavior for respondents between the age of 15 and 49. The present analysis considers only women for whom both interview data and a blood sample were provided. Questions on marital status and sexual behavior were asked in private settings by highly-trained, same-sex survey interviewers after assuring respondents of the confidentiality of their answers. Previously married women were defined as women who were currently divorced, permanently separated, and widowed. Biomarkers included three STIs (HIV 1/2, Herpes simplex virus type 2 [HSV-2], and syphilis) which were combined into a single summary score for analysis. Ethical review boards in the United States and India approved the protocol and procedures for this study.

Family Structure

Many demographers of South Asia follow the Census of India, which specifies five categories of family structure: single member, nuclear, broken nuclear, supplemented nuclear, and joint families (Chakravorty & Singh, 1991). We sought to create a family structure variable that was more specific to the Telugu-speaking population of coastal

Andhra Pradesh and to our purposes of testing culturally consonant familial support for previously married women. Based on two years of ethnographic fieldwork in Andhra Pradesh conducted by the present paper's lead author, we created nine categories of family structure reflecting the local preference for fraternal jointness and differentiating between matrilineal and patrilineal residence:

1. Living alone
2. Adult-only households (not married to each other)
3. Single father and children (may include man's mother)
4. Single mother(s) and children
5. Nuclear (may include previously married children returned to their natal home)
6. Patrilineally extended: nuclear family + man's uncoupled relative(s)
7. Matrilineally extended: nuclear family + woman's relative(s)
8. Double nuclear: married couple living with their son and daughter-in-law +/- grandchildren
9. Fraternal joint: married brothers or cousin-brothers living together +/- other relatives

Participants living in polygynous households (less than 0.2% of the sample) or in households that could not be coded within the above nine categories were excluded from the analysis as they present too unusual a scenario to be considered for comparison.

Statistical Analysis

The objective of this analysis was to assess how social and demographic factors affect the risk of STIs in women. We employed multiple logistic regression (Cox, 1989). The dependent variable was a dichotomous variable that takes a value of one if the respondent was seroprevalent for one or more STIs, and zero for no evidence of current/previous infection. Independent variables were as follows: a) area of residence (rural and urban); b) religion (Hindu, Muslim, Christian, and all others); c) age group (15–19 year, 20–24 years, 25–29 years, 30–34 years, and 35–49 years); d) family structure (living alone; adults only; single father and children; single mothers and children; nuclear; patrilineally extended; matrilineally extended; double nuclear; fraternal joint); e) standard of living index (0–16, 17–22; 23–29; 30–54) which is based upon living conditions and ownership of assets (IIPS 2000; f) marital status (married; widowed, divorced, separated; never married); g) education (no schooling; Class 1 through 10; Class 11 and 12; technical education, college or higher); and h) lifetime number of sexual partners (none; one; more than one; two; more than two). The age, standard of living, and education variables are categorized per Dandona et al., 2008. The variables “religion” and “caste” were not included together in the model as this would have introduced unacceptable levels of numerical instability due to multi-collinearity. For this reason, we opted to include only religion, as this variable has been associated with STI seroprevalence in this setting (Becker 2007:744). The family structure variable is described above. A summary STI seroprevalence score included three STIs (HIV 1/2, Herpes simplex virus type 2 [HSV-2], and syphilis) which were combined into a single summary score and dichotomized to a value of 1 if the respondent was seroprevalent for any of the three STIs, and zero in all other cases. Two separate models, one for all women and one for previously married women, were created including variables selected on the basis of either prior research findings or substantive interest for this analysis. Covariates of theoretical importance were included even when not significant themselves because of the potential for significantly altering the magnitude of the estimates of key predictors being

considered, resulting in estimate bias. Associations are reported as odds ratios (OR) with their relevant 95% confidence intervals (95% CI). The models were run using PROC LOGIST in SAS version 9.2.

Results

Table 1 provides socio-demographic and behavioral characteristics of the female sample as a general overview of women in this region; 10% of whom were previously married. As this table indicates, women in this area are largely poor, little educated, Hindu, not from a forward caste, typically living in nuclear families and overwhelmingly married. Nearly 10% of them suffer from one or more STIs. Missing cases were 128 for age, 6 for residence, 32 for caste, 32 for religion, 7 for standard of living, 372 for education, 15 for marital status, 164 for family structure, and 15 for number of STIs.

Residence patterns for previously married women are as follows: 58 (9.54%) live alone; 33 (5.43%) live only with other uncoupled adults; 8 (1.32%) live in households headed by single fathers; 265 (43.59%) live in households headed by single mothers; 71 (11.68%) live in their nuclear, natal families; 90 (14.80%) live in patrilineally extended households; 11 (1.81%) live in matrilineally extended households; 16 (2.63%) live in double-nuclear households; and 56 (9.21%) live in fraternal joint households. By this tabulation, while most women live alone or with only their dependent children after losing their husbands, 38.32% of previously married women reside in the home of their male relatives (fathers, brothers, sons, uncles and husband's families) after losing their husbands. Only about 2% of women move in with the families of their daughters or sisters after losing their husbands.

Table 2 summarizes the results of two multiple logistic regressions with STI seroprevalence as the dependent variable. The first regression model includes all women in the survey, while the second includes only previously married women.

Among the total female cohort, Muslim women, women of the highest standard of living, and women residing in rural areas experienced a lower STI seroprevalence. Increased age and a greater number of sexual partners were both associated with increased STI seroprevalence. Being previously married was strongly associated with STI seroprevalence, but there was no difference in seroprevalence rates between married and never married women. With all else controlled, STI seroprevalence did not differ across women living within the array of family structures—from “broken” single mother homes to “modern” nucleated families to “traditional” double nuclear and joint families.

An analysis of previously married women alone demonstrated that several of the associations in the total female cohort lost their statistical significance. Urban residence continued to be positively associated with STI seroprevalence among previously married women. Previously married Muslim women continued to have fewer STIs than previously married Hindu and Christian women. In this model, one new category of family structure; previously married women living in matrilineally extended families showed a greater STI seroprevalence that was not evident in the total female cohort model.

Discussion

This analysis indicates the enduring importance of area of residence, religion and marital status to STI prevalence. While differences in sexual behavior may explain the lower prevalence of STIs among Muslim women, Dandona et al. (2008) found that the near ubiquity of circumcision among Muslim men may best explain their decreased risk. Among previously married women, the only variable which remained significant beyond area of residence and religion was the category of matrilineally extended families. Among the

previously married women model, level of education, differences in standard of living and even numbers of sex partners lost statistical significance in contrast to the model which included all women.

Less than 2% of previously married women lived in matrilineally extended families—that is, with the nuclear families of their daughters, sisters, or aunts. Living with male relatives was far more common. The association of a high prevalence of STIs with this residence pattern may indicate a different set of sexual behaviors among previously married women who are permitted to live with the families of their female relatives. Alternatively, it might be that previously married women who find themselves debilitated by one or more STIs (particularly in the cases where HIV has advanced to AIDS) may seek care from their female relatives and relocate into these households, thereby simultaneously creating new instances of matrilineally extended families and increasing the apparent prevalence of STIs within these families.

Four social scenarios have been proposed as possible explanations why previously married women have more STIs than other women in Andhra Pradesh: I) their husbands die after infecting them; II) their husbands abandon them after learning their wives are infected; (III) after losing their husbands, they seek out male partners for financial support; and (IV) they become targets of sexual predation after becoming previously married (Becker et al. 2007 and Bowen et al. 2010)

In the cases of scenarios I and II, if HIV/AIDS per se is the proximal cause of these women losing their husbands, then we ought to find that previously married status would be less significantly correlated with other STI infections, since these are neither deadly (leaving the woman widowed by their infected and subsequently deceased partners) nor as highly stigmatized as HIV (which extreme stigma is more likely to cause abandonment). However, we find that in the above analysis, the prevalence of STIs remains high among previously married women even though the largely non-fatal, and often more prevalent STIs such as HSV-2 are included with HIV 1/2 as part of a combined dependent variable. This suggests that instances of husbands dying after infecting their wives would only explain a small portion of prevalence of STIs among previously married women in this sample. We cannot rule out the effect of scenario II through this analysis; nevertheless, we suggest that while scenario II might be plausible with cases of HIV infection, it is far less likely in cases of a wife's being infected with HSV-2 and syphilis, neither of which elicit the same severe social response as HIV as HIV bears immense stigma in this region (Ekstrand, Bharat, Ramakrishna & Heylen, 2011; Mawar, Saha, Pandit & Mahajan, 2005; Steward et al., 2008; Subramanian, Gupte, Dorairaj, Periannan & Mathai, 2009; Van Hollen, 2010). Thus, by including these two other more common STIs in combination with HIV as a dependent variable, we reduce the likelihood that abandonment after infection could explain the high prevalence of combined STIs among previously married women in this sample.

Scenario III posits that previously married women (like women who enter commercial sex work in response to the economic instability they encounter from losing their husbands) seek out male sex partners as a means of at least partial financial support, thereby exposing themselves to greater risk of infection. If financial insecurity were the primary mechanism exposing previously married women to increased infections, we would expect to find a higher rate of STIs among previously married women with a lower standard of living, among less educated (i.e. less lucratively employable) previously married women, and among previously married women living by themselves or with their dependent children than among previously married women living in ostensibly more supportive situations with their fathers', sons' and brothers' families. However, the results above indicate that the Standard Living Index and education are not significantly associated with STI prevalence

among previously married women. Similarly, previously married women across family structures (except the 1.81% living in matrilineally extended families) bear the same burden of STI prevalence. Previously married women who must support themselves *and* previously married women being supported by their relatives bear the burden of a higher rate of STIs.

In scenario IV, previously married women are marked as ready sexual targets by men in their communities. This scenario suggests that it is the status of being widowed, divorced or separated *per se* that puts previously married women at greater risk of infection. Among previously married women, the variables standard of living, education and even age lost their relevance, suggesting that marital status itself is the more relevant identity marker for these women with relation to STI/HIV infection. In consideration of the marginal status apportioned to widows and divorcees in India (Amato, 1994; Mehta, 1975; Pothan, 1986), we propose this last scenario as the greatest contributing factor to the higher prevalence of STIs among previously married women, albeit recognizing that the other scenarios can occur alone or in combination.

Our study had several limitations. Because data was cross-sectional, causality cannot be determined. A follow-up study of the same population and participants is underway and could illuminate causal relationships between previously married status, family structure and STI seroprevalence. STI seroprevalence reflects lifetime exposure and may not be related to sexual transmission of these pathogens. However, we would not expect that other mechanisms of transmission (e.g., peripartum or blood transfusion) would be differentially expressed across family structures or marital status. Another limitation of the present study is that we can only sketch in broad outlines the specific gendered social constraints that affect the health of grouped populations. Questions of personal agency, which are incalculably important to any given individual's acquisition of STIs, remain outside the purview of this genre of research. Our findings are not meant to solidify and perpetuate the exploitable sexuality of previously married women, but rather to make visible one of the negative health outcomes constituted through gender inequality.

Marginalization of previously married women in India

Traditional gender roles in Asian communities have been identified as markedly unequal and physically harmful to women (Akerson & Subramaniam, 2008; Go et al., 2003; Hahm et al., 2011). From ancient times the Indian model of virtuous womanhood has been that of a perpetually monogamous wife who adjusts to her husband's family's expectations and remains faithful to him in the event of his repeated infidelity or even his death. Conversely, there has been little negative cultural sanction of sexually roving men, and only after British colonization was polygyny deemed illegal for Hindu men. Two thousand years ago the seminal Hindu law-giver Manu stated, "A virtuous wife should constantly serve her husband like a god, even if he behaves badly, freely indulges his lust, and is devoid of any good qualities" (Doniger, 1991:115). Contemporary social scientists mark the present persistence of these anciently condoned gender roles which disallow women from divorcing. Anthropologist, Susan Seymour (1999) remarks:

Regardless of their generation or education, [Indian] middle- and upper-status women had very negative views of separation and divorce. They maintained that a woman should never leave her husband even if she is very unhappy. As one young woman put it, "A woman has no right to leave an unhappy marriage. She can go to the police station [for help], but she cannot leave."

Female fidelity to husbands remains for most Indians so central to traditional gender norms that women who choose or find themselves in a separation or divorce are seen as morally questionable by their communities. Today, while many women who lose their husbands attempt to remarry as quickly as possible, by continuing to operate outside the prescribed

bounds of marriage, a woman marks herself as morally transgressive and therefore sexually targetable. The anthropologist, Leigh Minturn states: “The dichotomy between virtuous and immoral women is reflected in the behavior of Indian men towards any woman not observing traditional customs” (Mintur, 1993:78). Repeated studies have shown that one of the primary consequences of divorce for women is having to face sexual harassment both in the workplace and in social settings (Amato, 1994; Mehta, 1975; Pothen, 1986).

The fear that a woman without a husband loses her proper “sexual fencing” (Wardlow, 2006) extends to widows as well as divorced and separated women. Long before divorce began to gain visibility in India, widows have been known to turn to sex work to support themselves (Lamb, 2000; Minturn, 1993; Das, 1979; Gangakedhar, 1997). Sarah Lamb, an anthropologist working in east India wrote, “A widow, especially if young, was disturbing [to her community] not only in her possibly uncontained sexuality but in her liminality—someone who has forsaken her husband by remaining on earth, but who yet cannot ever be truly free from him to move on to form new or independent relationships and identities” (2000: 237). It is this liminality that situates widows, divorced and separated women alike as ready sexual targets. They are seen as both unhinged from proper sexuality and also unlikely to be able to re-insert themselves into the prescribed arena for feminine virtue by marrying again. Ejected from the protective bounds of marriage, widows, divorced and separated women become the object of male attempts at casual sex, since sexual relations with them are possible without concomitant social entanglements. The calculus seems to be that unless she manages to secure another, a woman who has lost her husband becomes the equal purview of all men. This marginalized sexual status in turn exposes previously married women to increased risk of acquiring a sexually transmitted infection.

Conclusions

The much higher STI prevalence among previously married women has not been fully digested by theorists nor acknowledged in public health efforts. Previously married women were just 10% of the sampled women and yet bore twice the burden of prevalent STIs compared to other women. Of the available explanations for this finding, the present analysis indicates the most likely to be that previously married women are treated as sexually targetable by their communities. Once confirmed by further research, this finding can inform specific interventions meant to address the particular social scenarios which put previously married women at increased risk.

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Table 1Socio-demographic and Behavioral Characteristics of the Female Sample ($N=6967$)*

Variable	Frequency	Percent
<i>Age (years)</i>		
15–19	1018	14.6
20–24	1258	18.1
25–29	1110	15.9
30–34	957	13.7
35–39	977	14.0
40–44	815	11.7
45–49	704	10.1
<i>Residence</i>		
Rural	3391	48.7
Urban	3570	51.3
<i>Religion</i>		
Hindu	4535	65.4
Muslim	952	13.7
Christian	1449	20.9
<i>Caste</i>		
Forward	2639	38.1
Backward	1705	24.6
Scheduled Caste	1424	20.5
Scheduled Tribe	232	3.4
Not applicable	935	13.5
<i>Standard of Living Index</i>		
0–16	1876	26.9
17–22	1689	24.2
23–29	1625	23.3
30–54	1771	25.4
<i>Education</i>		
No schooling	2811	42.6
Class 1–10	2908	44.1
Class 11–12	354	5.4
Technical education/college or higher	522	7.9
<i>Marital Status</i>		
Not married	928	13.4
Married	5346	76.9
Separated	210	3.0
Divorced	34	0.5
Widowed	434	6.2
<i>Family Structure</i>		
Living Alone	79	1.2

Variable	Frequency	Percent
Adults only (not married to each other)	63	0.9
Single father and children	25	0.4
Single mothers and children	371	5.5
Nuclear	3956	58.2
Patrilineally Extended	750	11.0
Matrilineally Extended	79	1.2
Double Nuclear (+/- extended)	602	8.9
Fraternal Joint	877	12.9
<i>Individual's No. of STIs</i>		
0	6282	90.4
1	579	8.3
2	71	1.0
3	20	0.3

* Missing cases were 128 for age, 6 for residence, 32 for caste, 32 for religion, 7 for standard of living, 372 for education, 15 for marital status, 164 for family structure, and 15 for number of STIs.

Table 2

Factors associated with STI seroprevalence for all women and previously married women in two separate models from Guntur District of Andhra Pradesh, India (n=6376).

	All Women (N =6376)		Previously Married Women (N= 634)	
	<i>N (% of total)</i>	<i>Odds Ratio (95% CI)</i>	<i>N (% of total)</i>	<i>Odds Ratio (95% CI)</i>
<i>Age</i>				
15–19	919 (14.4)	0.51 (0.34–0.77) ^b	11 (1.7)	1.87(0.45–7.80)
20–24	1153 (18.1)	0.48 (0.35–0.64) ^d	58 (9.1)	0.83 (0.38–1.83)
25–29	1038 (16.3)	0.67 (0.51–0.89) ^b	72 (11.4)	1.11 (0.57–2.18)
30–34	896 (14.1)	1.02 (0.79–1.32)	85 (13.4)	1.09 (0.59–2.03)
35–39	889 (13.9)	1.10(0.86–1.41)	105 (16.6)	0.88 (0.48–1.59)
40–50	1481 (23.2)	1.00 (ref)	303 (47.8)	1.00 (ref)
<i>Residence</i>				
Urban	3203 (49.7)	1.00 (ref)	325 (51.3)	1.00 (ref)
Rural	3173 (50.2)	0.32 (0.26–0.39) ^d	309 (48.7)	0.30 (0.20–0.47) ^d
<i>Religion</i>				
Hindu	4153 (65.1)	1.00 (ref)	375 (59.1)	1.00 (ref)
Muslim	893 (14.0)	0.63 (0.48–0.82) ^c	101 (15.9)	0.27 (0.14–0.55) ^c
Christian	1330 (20.8)	1.12 (0.91–1.39)	158 (24.9)	1.07 (0.67–1.71)
<i>Standard of Living Index</i>				
0–16	1709 (26.8)	1.00 (ref)	266 (42.0)	1.00 (ref)
17–22	1595 (25.0)	0.93 (0.74–1.17)	159 (25.1)	0.72 (0.43–1.22)
23–29	1513 (23.7)	0.86 (0.671–1.10)	121 (19.1)	0.82 (0.45–1.50)
30–54	1559 (24.45)	0.61 (0.46–0.82) ^b	87 (13.7)	0.58 (0.27–1.23)
<i>Education</i>				
None	2734 (42.9)	1.00 (ref)	400 (63.1)	1.00 (ref)
Class 1–10	2824 (44.3)	0.83 (0.69–1.01)	206 (32.5)	0.97 (0.61–1.52)
Class 11–12	335 (5.3)	0.62 (0.38–1.01)	8 (1.3)	0.45 (0.05–4.13)
Technical/College	482 (7.6)	0.48 (0.30–0.76) ^b	20 (3.2)	0.31 (0.06–1.55)
<i>Marital Status</i>				
Never Married	833 (13.1)	0.81 (0.34–1.90)	N/A	N/A
Currently Married	4909 (76.9)	1.00 (ref)	N/A	N/A
Previously Married	634 (9.9)	1.82 (1.31–2.51) ^b	N/A	N/A
<i>Family Structure</i>				
Living Alone	72 (1.2)	1.36 (0.72–2.54)	58 (9.5)	1.43 (0.60–3.39)
Adults only	56 (0.9)	1.12 (0.51–2.47)	33 (5.4)	1.21 (0.42–3.43)
Single father	21 (0.3)	1.35 (0.37–4.96)	8 (1.3)	0.50 (0.05–5.08)
Single mother	350 (5.6)	1.04 (0.69–1.55)	265 (43.6)	1.14 (0.59–2.18)
Nuclear	3645 (58.3)	1.00 (ref)	71 (11.7)	1.00 (ref)

	All Women (N =6376)		Previously Married Women (N= 634)	
	<i>N (% of total)</i>	<i>Odds Ratio (95% CI)</i>	<i>N (% of total)</i>	<i>Odds Ratio (95% CI)</i>
Patrilineally extended	693 (11.1)	0.81 (0.60–1.10)	90 (14.8)	0.75 (0.33–1.74)
Matrilineally extended	72 (1.2)	1.75 (0.92–3.33)	11 (1.8)	4.41 (1.41–18.68) ^a
Double nuclear	537 (8.6)	0.98 (0.70–1.38)	16 (2.6)	2.42 (0.69–8.41)
Fraternal joint	796 (12.8)	0.96 (0.73–1.28)	56 (9.2)	1.02 (0.40–2.57)
<i>No. of sex partners</i>				
Zero	759 (11.9)	0.86 (0.34–2.14)	N/A	N/A
One	4909 (76.9)	1.00 (ref)	397 (65.3)	1.00 (ref)
More than 1	551 (8.6)	1.45 (1.12–1.89) ^b	N/A	N/A
Two		N/A	145 (23.8)	1.31 (0.81–2.12)
More than two		N/A	64 (10.5)	1.07 (0.53–2.17)

^a *p* value <0.05

^b *p* value <0.01

^c *p* value <0.001

^d *p* value <0.0001

Missing values for the “all women” model: family status—150, Age—6, Religion—6, Residence—6, Standard of living—6, marital status—6, education—7, number of sex partners—163

Missing values for “previously married” model: standard of living—9; family status—26; sex partners—28; age, education, residence and religion—0