Dyadic Association Between Sexual Dysfunction and Sexual Satisfaction: A Cross-Sectional Survey of Heterosexual Couples in Hong Kong

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Abstract

Substantial evidence has demonstrated that sexual dysfunction is negatively associated with the sexual satisfaction of individuals in a committed heterosexual relationship. However, little is known about their relationship based on couple data, especially in non-Western societies. We extended this study to examine the extent to which men's and women's sexual dysfunction were associated with their own as well as their partners' sexual satisfaction. Participants were 1,014 heterosexual couples who participated in a community-based survey in Hong Kong in 2017. Using the actor–partner interdependence model and structural equation modeling, our results indicated that the dyadic model fit the data better than the individual model. Women's orgasm and men's sexual desire functioning were significant predictors of both own and partner's sexual satisfaction, and these two domains had similar effects on the sexual satisfaction of both men and women. These findings are discussed in terms of the importance of taking a dyadic approach to research and enhance sexual health and well-being of heterosexual couples.

Keywords: Sexual Dysfunction, Sexual Satisfaction, Dyadic Approach, Hong Kong Chinese, Heterosexual Relationship

Sexual satisfaction is not only an indicator of sexual health but also a barometer of marital life quality (Christopher & Susan,2000; Sánchez-Fuentes et al.,2014; World Health Organization,2010; Zhang et al.,2016), which has been found to be significantly associated with an individual's well-being (Cheung et al.,2008; Fisher et al.,2015; Lawrance & Byers,1995). However, in traditional China's sociocultural context, sexuality-related topics (i.e., sexual expression, sexual problems, and sexual pleasure) have always been sensitive and obscure (Evans,1995; Pan,1994); moreover, sex for pleasure is viewed as detrimental to the social order and personal health (Ruan,1991). Thus, for a long time, the sexual satisfaction of Chinese men and women received little societal or research attention. With rapid social changes, there appears to be greater tolerance and less social control of diverse sexual attitudes and behaviors in China over the past few decades (Herold & Byers,1994; Renaud et al.,1997; Yan,2003). According to a report on China's sexual health, the proportion of Chinese who have had premarital sex increased from 15% in 1989 to 71% in 2012 (Ruan, 2013). Indeed, no matter how hard the government tries to rein in people's thoughts and behaviors, sex ideologies in China has changed dramatically, such as premarital sex, extramarital sex, and homosexuality have become increasingly visible (Hu,2016), this led many scholars to claim that a national sexual revolution is under way (Burger,2012; Farrer & Sun,2003). Meanwhile, obtaining high levels of sexual satisfaction has increasingly become a life goal pursued by Chinese men and women. For instance, one early study found that married Chinese women and men rated sexual satisfaction as the third and fourth most important factors in marital satisfaction, respectively (Pan,1994). One recent study, based on data from a longitudinal survey covering mainland Chinese residents aged 18–61 years, showed that from 2000 to 2015, the sexual satisfaction of Chinese men and women had increased significantly. For men, the percentage of self-reported sexual satisfaction increased from 32.0% in 2000 to 43.1% in 2015, and for women it increased from 22.3% to 42.4% correspondingly (Hou & Pan,2018). One report indicated that there was also an increasing trend in Hong Kong from 2002 to 2017 in which Chinese couples agreed that there is a positive relationship between marital satisfaction and sexual satisfaction for both men and women (men: 72.5% in 2002 to 83.2% in 2017; women: 68.7% in 2002 to 81.7% in 2017) (Family Planning Association of Hong Kong,2019). This phenomenon suggests that the pursuit of sexual satisfaction is gradually lifting the veil and increasingly attracting the attention of the public as well as researchers. However, in both Hong Kong and Mainland Chinese studies, most researchers have included only one partner in the relationship in their sample (Cheung

et al.,2008; Lau et al.,2006; Parish et al.,2007; Zhang et al.,2016), and little is known about the dyadic influences on sexual satisfaction between couples in Chinese societies.

Sexual dysfunction (e.g., problems with orgasm, lack of sexual desire, impotence, and vaginal dryness) has been identified as one of the important factors associated with sexual satisfaction. Previous studies in Western countries have demonstrated a significant association between an individual's sexual functioning and their sexual satisfaction (Chevert et al.,2004; Fugl-Meyer et al.,2006; Rosen et al.,2016; Stulhofer et al.,2005; Stulhofer et al.,2013). Similarly, there was one study based on individual data that investigated the association between sexual dysfunction and sexual satisfaction in Hong Kong (Zhang et al.,2015).However, most studies have collected data from only one partner in the couple, and considerable evidence has shown that interdependence among partners is an important and distinct characteristic of close relationships (Van Lange & Balliet,2015). In other words, one partner in a committed close relationship will influence the other partner through their daily interactions (Byers et al.,2004; Lawrance & Byers,1995).

Specifically, with regard to sexuality and interdependence among partners, some studies have found that an individual's sexual functioning is related to not only their own sexual satisfaction but also their partner's sexual satisfaction (Fisher et al.,2015; Pascoal et al.,2018; Rosen et al.,2020). As highlighted by one previous study (Pascoal et al.,2018), even when researchers have collected data from both partners in a romantic relationship, a majority of them have not taken a dyadic approach toward data analysis that considers the couple as a unit of analysis. Recently, studies on the association between sexual dysfunction and sexual satisfaction are emerging that use data collected from both partners in the relationship and take a dyadic approach for data analysis. The actor–partner interdependence model has been widely adopted to analyze dyadic data (Kenny & Cook,2005; Kenny et al.,2006), especially in heterosexual couples, which can examine both actor effects and partner effects (Fisher et al.,2015; Rehman et al.,2011). In other words, couples' sexual satisfaction can be fully understood only from a dyadic perspective—that is, by considering the reciprocal influences between partners (Lawrance & Byers,1995; Pascoal et al.,2018). As most studies investigating these topics have been conducted on unrepresentative samples, such as online convenience samples or patients in clinical settings, population-based studies with representative samples are urgently needed to explore the dyadic associations between sexual dysfunction and sexual satisfaction in couples. No such prior study has been conducted in the Chinese context.

Based on the most recent community-based heterosexual couple survey in Hong Kong in 2017, the aim of the present study was to examine the extent to which men's and women's sexual dysfunctions were associated with their own sexual satisfaction as well as that of their partners, and subsequently to estimate the differences in the magnitude of these associations between genders.

METHOD

Participants

The data used in this study came from the 11th Knowledge, Attitude, and Practice (KAP) survey, conducted by the Family Planning Association of Hong Kong (FPAHK) in 2017. The KAP survey is the longest-running territory-wide household survey of family planning in Hong Kong; it has been carried out every five years since 1967 and covers a wide range of family planning topics, such as sex-related issues and psychological well-being. This study was approved by the Ethics Committee of the University of Hong Kong.

The sampling and survey process are as follows (see Figure 1):FPAHK provided one survey company with a sample of 15,000 living quarters (LQs), which was systematically draw by the Census & Statistics Department using a random sampling method. Based on the 15,000 LQs, this company further randomly selected 14,718 LQs to represent the LQs in each of the 18 District Boards of the territory systematically and proportionately. The eligible respondents for the survey were married or cohabited Chinese females aged between 15 and 49 and their partners. A total of 1,514 female participants and 1,059 of their husbands or cohabiting partners were successfully approached after obtaining their informed consent. Compared with the 2016 Bi-census age-distribution of Hong Kong, the proportion of married or cohabited women below the age of 30 was a bit higher (8.9% vs. 12.1%), that of between 30 and 44 was lower (68.0% vs. 61.1%), and that of 45-49 was a little higher (23.1% vs. 26.8%) in KAP 2017 survey. Both men and women were first asked to report their sociodemographic information through a face-to-face interview with a trained professional. Subsequently, they completed a self-administered questionnaire, which included sensitive items such as questions on sexual dysfunctions and sexual satisfaction. The final sample consisted of 1,059 successfully matched couples whose data were included in the analysis.

[Insert Figure 1 about Here]

In order to avoid selection bias, we tested the difference between successfully matched couples and unmatched couples. The unmatched couples were all due to the failure of the corresponding male partner to

complete the questionnaire. In this regard, the female sample was further divided into two groups (matched and unmatched), and the chi-square test was used to analyze the categorical variables (family monthly income, work status, have children, and cohabiting or married) and an ANOVA was used for the continuous variables (age, duration of relationship, and years of education). The results showed that women who matched successfully had a higher percentage of full-time jobs (61.98% for matched and 50.42% for unmatched), χ^2 (2, N =1,514) = 17.34, $p < .001$. There were no other significant differences between the groups. In addition to group testing, we used logistic analysis to incorporate relevant variables into a model for testing. The results are shown in Figure 2; these are consistent with the results of group testing. These results indicate that there was no obvious sample selection bias.

[Insert Figure 2 about Here]

Measures

Sexual Dysfunction

Male sexual dysfunction (MSD) was assessed by three items, and each item measured whether there had been a critical symptom or problem for three consecutive months within the previous 12 months: (1) sexual desire disorder (0 = no problem, 1 = not interested, 2 = too interested); (2) erectile dysfunction (0 = no problem, 1 = no erection, 2 = could not maintain erection); and (3) ejaculatory dysfunction (0 = no problem, 1 = premature ejaculation, 2 = cannot ejaculate). The response "0" was coded as no sexual dysfunction, and the response "1" or "2" was coded as sexual dysfunction. These items have captured the major domains of the *International Index of Erectile Function* (IIEF) (Rosen et al.,1999).

Female sexual dysfunction (FSD) has always emphasized inhibited sexual desire, inability to become aroused, lack of orgasm (anorgasmia), or pain during intercourse (Basson et al.,2000; Laumann et al.,1999 ; Zhang et al.,2016). We assessed FSD with six items to which participants responded with "yes" or "no" based on whether they had experienced the symptom or problem for three consecutive months within the past 12 months. The six items were as follows: (1) lack of interest in sex, (2) not finding sex pleasurable, (3) lubrication difficulties, (4) inability to achieve orgasm, (5) reach climax after sexual intercourse, and (6) physical pain during intercourse. These items capture the major problem domains in the classification of sexual dysfunctions in the fourth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (Laumann et al.,1994).

Sexual Satisfaction

We measured sexual satisfaction with a single-item on a scale from 1 to 5: “Are you satisfied with your sexual life?” Responses rated “very dissatisfied” (1), “moderately dissatisfied” (2), “neutral” (3) , “moderately satisfied” (4), and “very satisfied” (5). The scores were calculated separately for men and women; thus, there were two dependent variables in the analysis: men’s sexual satisfaction and women’s sexual satisfaction.

Sociodemographic Variables

The following sociodemographic variables were included in the analyses: age, relationship status (0 = cohabiting, 1 = married), relationship duration, years of education, religiosity (0 = non-religious, 1 = religious), family income per month (0 = less than HK $20,000; 1 = HK $20,000–40,000; 2 = more than HK $40,000 [7.8 HKD = approximately 1 US Dollar]), have children (0 = no, 1 = yes), and employment status (0 = unemployed, 1 = full-time job, 2 = part-time job).

Statistical Analyses

All analyses were conducted with Stata version 15.0. To determine the degree of non-independence (Kenny & Cook,2005; Pascoal et al.,2018), interrelations among the main variables were analyzed with Pearson correlations (see Table 1), and the results indicated that men’s and women’s sexual satisfaction and sexual dysfunctions were interdependent.

We used structural equation modeling to examine the link between sexual functioning and sexual satisfaction in heterosexual couples. To assess model fit, we used the following criteria: root mean square error of approximation (RMSEA) < .08, RMSEA 90% confidence interval (CI) ≤ .10, standardized root-mean-square residual (SEMR) < .05, and comparative fit index (CFI) and Tucker–Lewis index (TLI) > .90 (Hu & Bentler,1998; StataCorp,2013).

The analyses were conducted in a series of steps. First, we tested two alternative models. The actor model included paths from only own sexual functioning domains to own sexual satisfaction (see Figure 3a). In addition to their own sexual dysfunction, men’s and women’s sexual satisfaction may also affect the partner’s sexual dysfunction and other factors that are difficult to be observed. If these potential effects are ignored, then the estimation of the coefficient of sexual dysfunction on sexual satisfaction may be biased.

Therefore, the actor–partner interdependence model (APIM), the dyadic model, included the paths from each partner's sexual dysfunction domains to both own and their partner's sexual satisfaction (see Figure 3b). Subsequently, the two models were compared on their fit indices and percentage of variance explained using the chi-square test. The model with the better fit was used to examine gender differences and actor and partner effect differences.

RESULTS

Among the participants, the mean age of the women was 38.4 ± 6.9 years (range = 18–49) and the mean age of the men was 43.0 ± 9.2 years (range = 20–79). The means, standard deviations, and correlations for the main study variables are presented in Table 1. In the female sample, 22.8% reported at least one form of FSD, and in the male sample, 13.4% reported at least one form of MSD. On average, both men and women reported a moderate level of sexual satisfaction (M_{men} = 3.81, M_{women} = 3.80 out of a maximum of 5), and there were no significant differences between men and women (t = 0.98, p = 0.33). Inspection of the zero-order Pearson correlations indicated that the men's and women's sexual satisfaction were significantly correlated (r = 0.36, p < .001). In addition to the reach climax after intercourse, the women's sexual satisfaction was negatively and significantly correlated with all the domains of their own and their partners' sexual dysfunction. Men's sexual satisfaction was significantly correlated with all the domains of their own sexual functioning, negatively and significantly correlated with FSD of not finding sex pleasurable, lubrication difficulties, and inability to achieve orgasm, but positively and significantly correlated with FSD of reach climax after intercourse.

[Insert Table 1 about Here]

To test models of partner's sexual satisfaction, we examined a structural model that included only actor effects. The standardized path coefficients are shown in Figure 3a. In this model, women's sexual satisfaction was predicted by their lack of interest in sex, while men's sexual satisfaction was predicted by their lack of sexual desire and orgasmic dysfunction. The goodness-of-fit indices for the model were χ^2 (23, N = 888) = 68.47, p < .001, TLI = 0.64, CFI = 0.83, RMSEA = 0.047, 90% CI RMSEA = [.04 to .06], SRMR = 0.01. This model explained 6.9% of men's sexual satisfaction and 6.0% of women's sexual satisfaction. However, the model did not fit the data properly. Next, we conducted a structural model that included both actor and partner effects, that is, the APIM. This model included all potential effects, and the standardized path

coefficients are shown in Figure 3b (nonsignificant paths are not shown). The model fit was perfect: χ^2 (14, N = 888) = 17.78, $p < .001$, TLI = 0.95, CFI = 0.99, RMSEA = 0.02, 90% CI RMSEA = [.00 to .04], SRMR = 0.01. Subsequently, we compared the individual and the dyadic models. As the dyadic model fit the data better than the actor effects model (the differences between two models were significant, Likelihood-ratio test = 51.68, $p < .001$) and explained a larger proportion of the variance, we can conclude that the dyadic model is a better one for predicting heterosexual couples' sexual satisfaction.

[Insert Figure 3a & Figure 3b about Here]

On the basis of the APIM, as presented in Figure 3b, women's and men's greater sexual satisfaction were predicted by women who reach climax after intercourse, men's sexual desire functioning were significant predictors of both own and partner's sexual satisfaction. Women's lack of interest in sex and men's orgasmic dysfunction affected their sexual satisfaction respectively. This model explained 10.3% of men's sexual satisfaction and 10.5% of women's sexual satisfaction. In addition, gender and actor–partner effects differences were examined. The results showed that the actor–partner effects were not significantly different for women's reach climax after intercourse, $\chi^2(1) = 1.08$, $p = 0.30$, and men's sexual interest disorder, $\chi^2(1) = 1.25$, $p = 0.26$. The results suggest that these two domains of sexual functioning had similar effects on women's and men's sexual satisfaction.

DISCUSSION

Using a representative sample of 1,014 heterosexual couples in Hong Kong, the present study has contributed to the understanding of the dyadic association between sexual dysfunction and sexual satisfaction in the Chinese context, extending the actor–partner model to a non-Western sample. Specifically, Chinese women and their husbands or cohabiting partners were moderately satisfied with their sexual life, and no significant difference was found between men and women in their level of satisfaction. Meanwhile, 22.8% of the female participants reported at least one form of FSD and 13.4% of the male participants reported at least one form of MSD. Furthermore, this study found that women's orgasm functioning and men's sexual desire functioning were significant predictors of both one's own and one's partner's sexual satisfaction; these two domains had similar effects on the sexual satisfaction of both men and women in the couple.

Sexual Dysfunction and Partner's Sexual Satisfaction

The results of the present study are consistent with interdependence theory, which emphasizes that individuals influence each other's attitudes, emotions, and behaviors through their interactions (Lawrance & Byers,1995; Van & Balliet,2015). A pair is the basic unit of interpersonal interaction. If the non-independence of data are ignored and individual data are used as the unit of analysis in this paired relationship, the possibility of making Type I and Type II errors in statistical testing will increase (Cook & Kenny,2005; Kenny & Cook,2005). For example, Pascoal et al. (2018) examined the link between sexual functioning and sexual satisfaction in 124 mixed-sex couples in Portugal and showed that the dyadic model had a better fit than the individual model. The dyadic model explained 30.4% of the variance in women's sexual satisfaction and 24.7% of the variance in men's sexual satisfaction, and the individual model explained 18.6% and 6.1% of the variance, respectively. Thus, the APIM was a better method to fully understand the impact of the domains of sexual functioning on the sexual satisfaction of individuals in relationships. The smaller amount of variance found in our study compared to Patricia et al. could be because of the different measures used. Pascoal et al. used the Female Sexual Function Index, International Index of Erectile Function, and Global Measure of Sexual Satisfaction to measure continuous variables; these measures have stronger correlations with each other. Additionally, their sample was collected online, which could cause selection bias and thereby overestimate the correlation between sexual functioning and sexual satisfaction. In addition to this, the different sociocultural contexts could influence both the understanding and feelings of sexual functioning and sexual satisfaction.

We found that men's sexual desire disorder and not women's sexual desire disorder was negatively associated with both partners' sexual satisfaction, which is inconsistent with one study that showed women's sexual desire was associated with both partners' sexual satisfaction (Pascoal et al. ,2018), This difference may be attributed to different gender script expectations and cultural influences with regard to sexuality (Prouty & Lyness,2007). Studies on gender differences in sexuality indicate that initiating sex and engagement in sexual activities are performed more by men than their female partners (Peplau,2003). In traditional Chinese culture, men should initiate sex, be always prepared for sex, and be responsible for a women's orgasm. There is evidence that contemporary Chinese husbands were more likely to initiate coitus than their wives (Zhou, 1994). Therefore, when a man has sexual desire disorder, both partners will feel a lack of sexual satisfaction if the man is unable to enact his role as the initiator of sex in the relationship. In contrast, in traditional Chinese culture, women were not expected to derive pleasure from sex (Evans,1995);

thus, women's lack of interest in sex would be less likely to have a negative influence on both partners' sexual satisfaction.

Lastly, Chinese women from Hong Kong reported delayed orgasm after intercourse, which was positively associated with both partners' sexual satisfaction; this is inconsistent with studies showing that orgasm during intercourse was associated with sexual satisfaction (Fisher et al.,2015; Heiman et al.,2011; Pascoal et al.,2018). One explanation may be that women consider orgasm delay as a normal part of the sexual process, as they were culturally expected to limit their sexual desire and not talk about their sexual pleasure openly. As was found in a previous study, among Chinese couples, one of the most frequently experienced sexual problems for women was inhibited orgasm (Renaud et al.,1997). Additionally, in the culture of unequal sexual relationships, man usually concern himself with his own orgasm, so we can find that men's orgasm is associated with men's sexual satisfaction in our results. Meanwhile, orgasm occurrence during heterosexual interactions is lower in women than in men (Laumann et al.,1999; Richters et al.,2006), one study assessed data from 1,055 women ages 18 to 94 who answered a detailed online survey about their sex lives, found that only about 18% of women reported being able to climax during intercourse from vaginal penetration alone (Herbenick et al.,2018). As such, women reach orgasm after intercourse (that is, after a man ejaculates), would be used for the pleasure and sense of personal accomplishment of their male partner foremost, which would be consistent with the cultural norms for sexual behavior. Another explanation may lie in a semantic understanding bias in the female participants. We found that among the two domains of female orgasm dysfunction, only the dimension of reaching orgasm after sexual intercourse had a significant influence. The purpose of this item was to assess orgasm delay as a dysfunction (Zhang et al.,2016). One previous study used the same item in the 2012 KAP survey to estimate the consequences of FSD among reproductive-aged Chinese married women in Hong Kong; moreover, they also found a significant positive association with women's sexual satisfaction (Zhang et al.,2015). Therefore, it is reasonable to assume that the item used to measure delayed orgasm in women could have been interpreted differently by the participants, who answered yes or no with regard to when they have an orgasm (i.e., reach climax after sexual intercourse). Considering this reason, it would be important in future studies to evaluate content validity of the measure and items that will be used to assess sexual dysfunction in the process of translating the questionnaire.

Limitations and Conclusions

This study has much strength because it used a large-scale representative Hong Kong Chinese sample, and APIM statistical techniques were employed in analyzing the data. However, it has several limitations as well. First, the measurement of FSD was based on self-report as opposed to a formal clinical diagnosis by trained professionals, and the measurement of MSD was based on self-report using a single item each for three domains of MSD instead of a comprehensive scale or clinical diagnosis. In addition, sexual satisfaction was assessed with one global item, which overlooks rich information that is involved in feelings of sexual satisfaction. In future studies, adopting a well-validated international scale is necessary, such as the Female Sexual Function Index, International Index of Erectile Function, and Global Measure of Sexual Satisfaction. Second, we assessed both partners' perceptions of their own sexual functioning. However, the perceptions of one's partner's sexual functioning can impact one's own experience (Kenny & Acitelli, 2001). Thus, along with assessing the participants' own functioning, future studies should include the perceptions of the partners' functioning. Third, as all participants resided in Hong Kong at the time of this survey and considering the huge differences between different regions of China, the results from this study cannot be generalized to all Chinese societies. Finally, because of the cross-sectional design of this study, the temporal sequence of cause and effect could not be determined; therefore, one should be cautious in making any inferences about the causal relationship between sexual dysfunction and sexual satisfaction.

In conclusion, based on a representative sample of Chinese women and their marital or cohabiting male partners in Hong Kong, China, and guided by the APIM and structural equation model, we demonstrated that sexual satisfaction of both genders was associated with their own sexual functioning as well as that of their partners. In addition, a gender-similarity effect was found. The findings of this study have important implications for sexual satisfaction enhancement in couples. First, couple-based interventions are more effective for sex therapy, especially in sexual dysfunction domains. Second, the influence of sexual dysfunctions on sexual satisfaction is equally important for men and women, and healthcare professionals in sexual medicine should give special attention to it.

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Table1

Zero-Order Pearson Correlations, Means, and Standard Deviations for Women's and Men's Sexual Satisfaction and Domains of Sexual Dysfunction

Measure	1	2	3	4	5	6	7	8	9	10	11
1.Women's sexual satisfaction	1.00	-0.16***	-0.16***	-0.11**	-0.12**	0.04	-0.11**	0.36***	-0.19***	-0.08**	-0.09**
2. Lack of interest in sex (W)		—	0.54***	0.31***	0.41***	0.21***	0.30***	-0.03	0.12**	0.10**	0.11**
3. Not finding sex pleasurable(W)			—	0.41***	0.60***	0.24***	0.33***	-0.08*	0.12**	0.06*	0.08*
4. Lubrication difficulties(W)				—	0.41***	0.21***	0.45***	-0.06*	0.13***	0.11**	0.14***
5. Inability to achieve orgasm(W)					—	0.15***	0.37***	-0.10**	0.15***	0.08**	0.11**
6. Reach climax after intercourse(W)						—	0.15***	0.11**	0.07*	0.05	0.02
7. Physical pain during intercourse(W)							—	-0.04	0.10**	0.01	0.06
8. Men's sexual satisfaction								—	-0.19***	-0.16***	-0.17***
9. Sexual desire disorder(M)									—	0.39***	0.25***
10. Erectile dysfunction(M)										—	0.49***
11. Orgasmic dysfunction(M)											—
Mean	3.80	0.08	0.09	0.09	0.09	0.07	0.09	3.81	0.10	0.05	0.04
Standard deviation	0.62	0.27	0.29	0.28	0.28	0.26	0.29	0.65	0.29	0.21	0.20

Note. W=women and M=men.
N=1,014.
*p<.05; **p<.01;***p<.001.

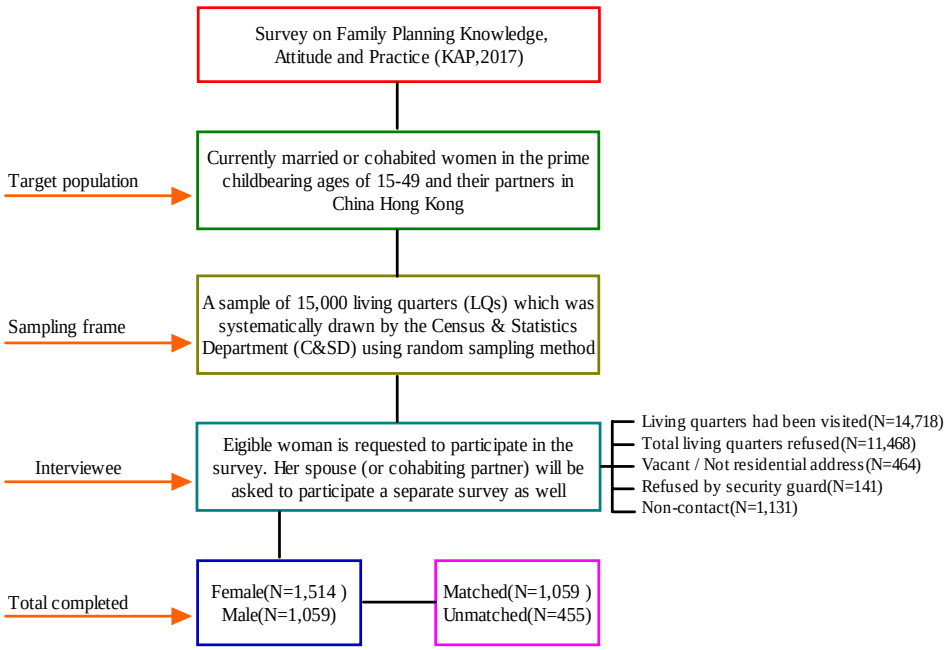


Figure 1. Sampling and survey process.

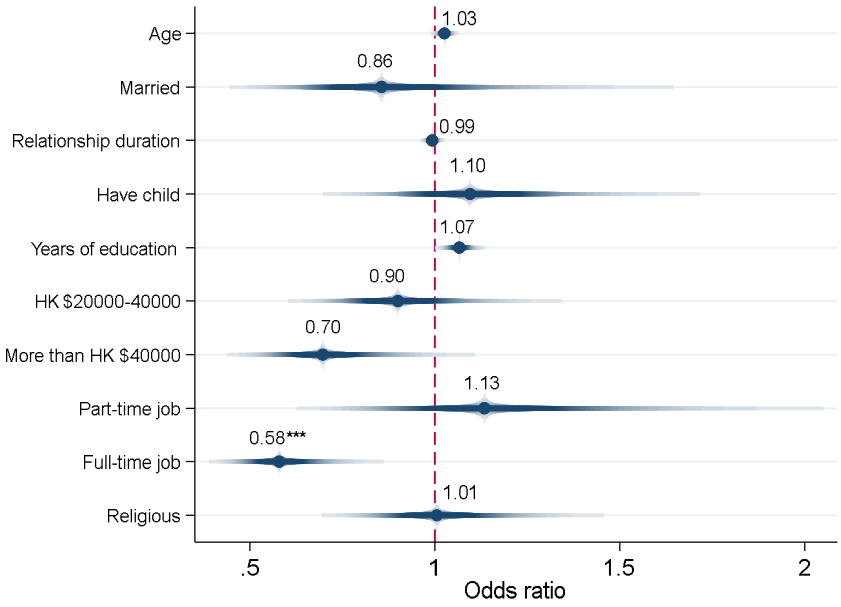
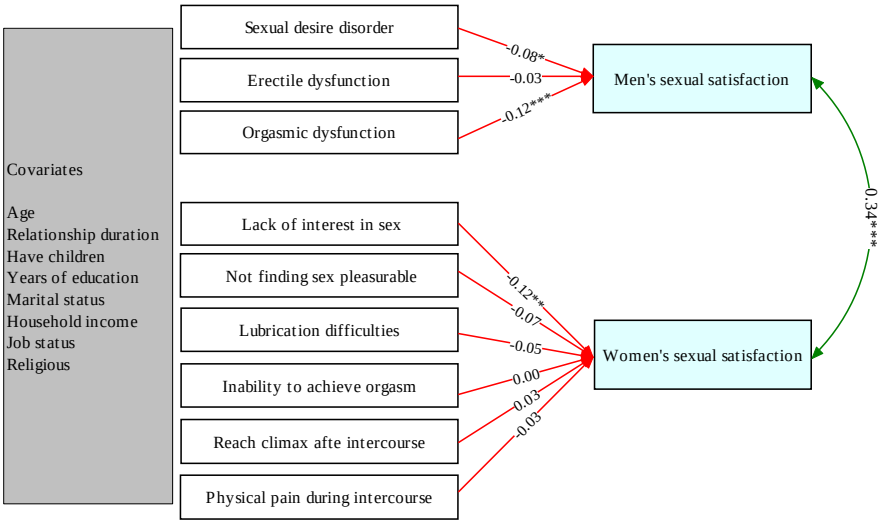
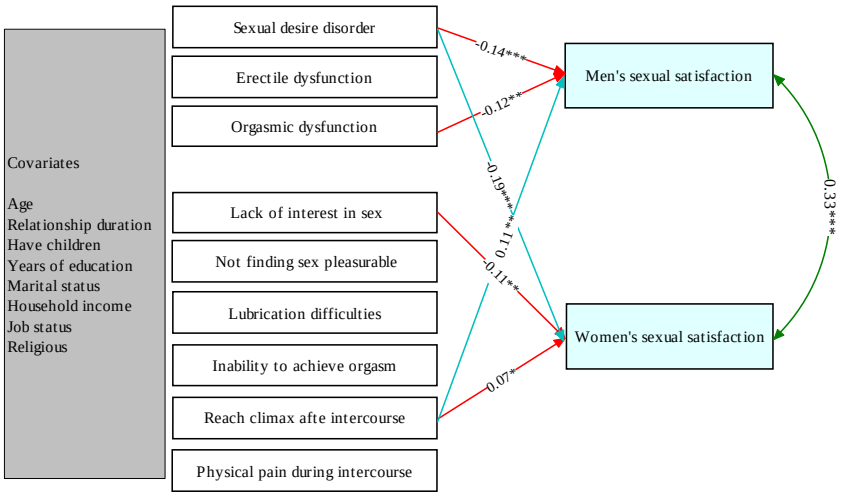


Figure 2. Multi-dimensional balance test between matched and unmatched samples. *Notes*: The circle represent the coefficients of logistic regression; the dashed lines represent the 95% confidence intervals. ***p < .001(two-tailed).



Chi-Square=68.47, *df*=23, *P*-value=0.000, RMSEA=0.047, SRMR=0.014

Figure 3a. Results of the individual model. *Notes*: Standardized coefficients are reported. *p < .05(two-tailed); **p < .01(two-tailed); ***p < .001(two-tailed).



Chi-Square=17.78, *df*=14, *P*-value=0.000, RMSEA=0.017, SRMR=0.005

Figure 3b. Results of the dyadic actor-partner interdependence model. *Notes*: Standardized coefficients are reported. Nonsignificant paths are not shown**.** *p < .05(two-tailed); **p < .01(two-tailed); ***p < .001(two-tailed).