



Sexual Satisfaction and Cognitive Schemas Activated in a Sexual Context among Iranian Married Women of Reproductive Age

Nasim Bahrami^a , Maria Manuela Piexoto^b , Mark D. Griffiths^c  and Zainab Alimoradi^a 

^aSocial Determinants of Health Research Center, Research Institute for Prevention of Non-Communicable Diseases, Qazvin University of Medical Sciences, Qazvin, Iran; ^bThe Psychology for Positive Development Research Center, Lusíada University, Porto, Portugal; ^cPsychology Department, Nottingham Trent University, Nottingham, UK

ABSTRACT

The present study examined the relationship between sexual satisfaction (SS) and cognitive schemas activated in sexual context. In a cross-sectional study, the participants comprised 313 Iranian married women (mean age of 36.7 years and mean marriage duration of 12.4 years). Data were collected utilizing an online survey comprising the Index of Sexual Satisfaction, the Cognitive Schema Activated in Sexual Context Questionnaire, and a number of sociodemographic questions. A linear regression model utilizing the step-wise method was performed. The mean score of cognitive schemas relating to sexual problems was 35.56 (out of 140; SD = 14.68) with the highest mean in the Difference/Loneliness subscale (higher scores indicating greater negative schema activation). The mean score of sexual satisfaction on the ISS was 96.80 (out of 125; SD = 16.77). The highest scores of cognitive schemas relating to sexual problems were observed among individuals with low sexual satisfaction. Based on a multivariable linear regression model, age ($\beta=0.33$), spouse social support ($\beta=0.23$), and spouse job ($\beta=0.21$) had the highest regression coefficients in relation to sexual satisfaction among Iranian married women. Cognitive schemas activated in a sexual context were strongly and significantly associated with sexual satisfaction among Iranian married women of reproductive age. The findings suggest that schema therapy techniques be used alongside initiatives to promote spouse social support to help prevent problematic sexual cognitive schemas.

Introduction

Sexual satisfaction among married couples is one of the vital aspects of matrimony (Gadassi et al., 2016). Lawrance and Byers (1995) define sexual satisfaction (SS) as “*the emotional response of an individual’s mental evaluation to the positive and negative dimensions related to the sexual relationship*” (p.267). SS has also been defined in terms of the amount of sexual pleasure in relationships, and the ability of individuals to create mutual enjoyment (Young, Denny, Young, & Luquis, 2000). SS among females has been conceptualized as comprising five dimensions: sexual pleasure, sexual communication concerns, personal sexual concern, sexual verbal exchange, and sexual understanding (Meston & Trapnell, 2005). Many studies consider SS as a key factor in couples’ desired quality of life. Additionally, both general physical and mental wellbeing are associated with high SS (Abedini et al., 2020; Butzer & Campbell, 2008; Byers, 2005). Sexual dissatisfaction is one of the reasons for divorce and couples’ communication problems, and can negatively influence females’ health (Zegeye, Woldeamanuel, Negash, & Shibre, 2020). Moreover, the prevalence of sexual dissatisfaction is higher among females than males (Tehrani, Farahmand, Mehrabi, Afzali, & Abedini, 2012).

There are several factors associated with SS including individuals' and their spouse age, age gap between the couple, duration of marriage, level of education of spouses (Yoo, Bartle-Haring, Day, & Gangamma, 2014), employment status, economic status (Rainer and Smith, 2012), individuals' physical and mental health (Din, Akahbar, & Ibrahim, 2019; Scott, Sandberg, Harper, & Miller, 2012), proper family relationships (Ji & Norling, 2004), cultural factors (Higgins, Trussell, Moore, & Davidson, 2010), religious factors (Higgins, et al., 2010), social support (Henderson, Lehavot, & Simoni, 2009; Penhollow, Young, & Denny, 2009), and social taboos (Higgins, et al., 2010). SS can also be effected by an individual's attitude towards sexual performance (Valsangkar, Bodhare, Bele, & Sai, 2011). Cognitions are one of the most fundamental concepts related to sexual performance satisfaction (Oei and Baranoff, 2007). Here, cognitions comprise attitudes, thoughts, and schemas, in which schemas play a significant role in method and the quality of relationships between couples across various dimensions of life (Dehghani & Esmailian, 2017; McDermott, 2008).

Cognitive schemas are significant beliefs and feelings that individuals have about themselves and the environment that individuals have accepted without question (Carvalho & Nobre, 2014). Inconsistent and uncoordinated schemas in the sexual context of spouses can lead to dissatisfaction and eventually divorce (Young & Gluhoski, 1997). One of the main assumptions of Beck's theory of cognitive distortion in the field of psychological disorders (1976) is the presence of incompatible schemas. This is basically a deep learning pattern or theme that comprises memories, emotions, cognitions, and bodily feelings that are formed in childhood or adolescence. Moreover, they continue during life, concern individuals and relationships with others, and are highly inefficient (Young, 1999). Incompatible schemas can lead to bias in the interpretation of events, which may cause disruption in the couple's cohabitation (Falah Chay, Zarei, & Normandy Pour, 2014).

In the context of sexual performance, schemas comprise assumptions about the spouse and the marital relationship, as well as criteria for how they should be. Accordingly, most incompatible schemas will be the core of conflict between couples (Manzary, Makvandi, & Khajevand Khoshli, 2014). Fallah et al. (2014) found that incompatible schemas are associated with a reduction in marital satisfaction. On the other hand, the incompatible nature of schemas causes some individuals to encounter many problems in the process of satisfying their needs, especially sexual needs, which will eventually lead to dissatisfaction with their sexual performance (Hashemian, Shayan, Omidvar, & Modarres Gharavi, 2015). Since self-perception influences how individuals behave, it is expected that an individual's sexual beliefs and attitudes affect the processing of sexual information and influences sexual behavior (Rellini & Meston, 2011).

Individuals' attitude or knowledge about sexual intercourse or their ability to have sex is another significant factor influencing sexual activity and satisfaction. Automatic thoughts are images or cognitions that are reported as the consequence of an individual's cognitive schema or fundamental belief (Beck, 2011). Therefore, thoughts, attitudes and values of individuals are important components of sexual performance and are considered as significant sources affecting sexual response and satisfaction (Abedini, et al., 2020; Andersen & Cyranowski, 1994; Carpenter, Andersen, Fowler, & Maxwell, 2009). Andersen and Cyranowski (1994) note that sexual schemas are basic and core beliefs derived from past experiences. Moreover, current experiences and processing of sexual information (as well as judging, deciding and predicting sexual behavior) of individuals are based on them. Sexual schemas are also considered as a guide to sexual behavior (Andersen & Cyranowski, 1994). Females with different sexual schemas will have different ways of expressing sexual feelings and behaviors in their marital relationships, as well as their levels of sexual response and performance (Andersen, Woods, & Copeland, 1997; Cyranowski and Andersen, 1998). Individuals show different sexual desires and behaviors according to their positive or negative

schemas (Andersen & Cyranowski, 1995). Therefore, unpleasant sexual experiences in the past have been associated with higher levels of negative sexual schemas and lower levels of positive sexual schemas (Cyranowski, 1996).

Reissing et al. (2003) found that females who had a history of unpleasant sexual behaviors had fewer positive sexual schemas in comparison with females who had not experienced unpleasant sexual behaviors. In addition, Meston et al. (2006) reported that females with a history of sexual abuse had significantly higher levels of negative sexual schemas than females with no history of sexual abuse. In other words, positive sexual schemas will lead individuals to satisfying sexual relationships (Hoyt and Carpenter, 2015). Sexual intercourse in married life, including the expression of feelings and emotions to the spouse and how to have sex, can be affected by an individual's sexual schemas (Brassard, Dupuy, Bergeron, & Shaver, 2015).

Many factors can affect females' SS but previous studies have focused on individual, social, and economic factors. To best of the present authors' knowledge, the association between cognitive schemas in a sexual context and sexual satisfaction has not been considered in previous studies. Therefore, the present study investigated this association among married women adjusting for socio-demographic characteristics. It was hypothesized that among married women of reproductive age there would be a relationship between (i) sexual cognitive schemas and sexual satisfaction and (ii) socio-demographic characteristics and sexual satisfaction.

Method

Design and participants

A cross-sectional survey study was conducted comprising 313 Iranian married women of reproductive age. The exclusion criteria included women who were pregnant, currently breastfeeding, in menopause, and/or having known medical or psychological illnesses based on participants' self-report, experience of stressful events in the last trimester (such as losing a loved one), or unwillingness to participate in the study.

Sample size estimation

Considering the lowest correlation of 0.19 ($r = 0.19$), $\alpha = 0.05$ ($z_{1-\alpha/2} = 1.96$), $\beta = 0.20$ ($z_{1-\beta} = 0.85$), the minimum number of participants for the present study was estimated to be 216 based on below formula.

$$n \geq \left[\frac{(z_{1-\alpha/2} + z_{1-\beta})}{0.5 \times \ln\left[\frac{1+r}{1-r}\right]} \right]^2 + 3$$

Procedure

Participants completed an online survey hosted on the Porsline system. A link to the survey was distributed with help from staff at Qazvin health centers for eligible women to participate.

Measures

Demographic questions: The survey included questions concerning age, age at the time of marriage, length of marriage, educational level, professional occupation, age of spouse, educational level of spouse, professional occupation of spouse, and number of previous marriages.

Cognitive Schema Activated in Sexual Context Questionnaire (CSASCQ, Nobre & Pinto-Gouveia, 2009): The CSASCQ is a 28-item scale that assesses cognitive schemas in response to specific sexual episodes. First, four sexual episodes related to common sexual dysfunctions

are presented in the female version: hypoactive sexual desire disorder, orgasmic disorder, sexual pain, and subjective arousal difficulties. Participants rate the frequency of each sexual episode from 1 (*never occurs*) to 5 (*happens often*). Second, participants describe the emotions generated by the episode from a list of ten emotions (i.e., worry, sadness, disillusion, fear, guilt, shame, anger, hurt, pleasure, and satisfaction). Finally, participants are instructed to focus on the most frequent situation and associated emotions, and respond to 28 self-schema self-statements such as “*I’m incompetent*” and “*I’m ineffective*” (Beck & Beck, 1995) on a five-point Likert scale from 1 (completely false) to 5 (*completely true*). A factor analysis of the 28 schemas suggested a five-factor structure (Nobre & Pinto-Gouveia, 2009): Undesirability/Rejection, Incompetence, Self-depreciation, Difference/Loneliness, and Helplessness. Scores are summed with higher scores representing greater negative schema activation. Psychometric studies have demonstrated adequate test-retest reliability with a four-week interval ($r = .66$) and excellent internal consistency with a Cronbach’s alpha of .94. Good psychometric properties of the Persian version have been reported (Abdolmanafi et al., 2019). *Index of Sexual Satisfaction* (ISS; Hudson, Harrison, & Crosscup, 1981): The ISS is a 25-item scale that assesses the degree or magnitude of SS of individuals’ intimate relationship with their partner (e.g., “I feel that my partner enjoys our sex life”, “It is easy for me to get sexually excited by my partner”). Responses are answered on a five-point Likert scale from 1 (*never*) to 5 (*always*). For the purposes of the present study, the ISS was reverse-scored in order to facilitate interpretation (i.e., higher scores indicated greater sexual satisfaction). A study conducted by Larson, Anderson, Holman, & Niemann (1998) demonstrated excellent internal consistency (Cronbach alpha=.91). Good psychometric properties of the Persian version have been reported (Bahrami, et al., 2016).

Ethics

The study was approved by the Research Council and the Ethics Committee in Biological Research of the research team’s university (IR.QUMS.REC.1397.398). Participants were informed about the importance and goals of the research, the privacy and confidentiality of the information, the voluntary participation in the study, and that they could leave the study at any time. All participants provided informed consent. Data were collected anonymously. However, phone number of research team members (with expertise in sexual and reproductive health) were provided on the informed consent form. Participants were encouraged to contact with researchers if they had any sexual problems they wished to discuss confidentially.

Statistical analysis

Study data were analyzed by using SPSS software version 24. Quantitative continuous variables were calculated using means, and standard deviations, and categorical data were calculated using frequencies and percentages. Univariate and multivariate linear regression (controlling for demographic characteristics) was performed in order to examine the relationship between cognitive sexual schemas and sexual satisfaction. In the regression model, the total sexual satisfaction score was entered as a dependent variable. Additionally, other variables were entered as independent variables. Data entry in multivariate model was carried out utilizing the stepwise method. Considerations of using regression method including normal distribution of sexual satisfaction scores, lack of outliers, and lack of alignment between independent variables were observed.

Results

Demographic characteristics

The 313 Iranian married women had a mean age of 36.7 years ($SD=7.3$) and mean of marriage duration of 12.4 years ($SD=7.9$). The majority of women (81.2%) and their husbands (74.8%) had university education. The majority of participants (62%) were housewives. Only

2.6% of participants' spouses were unemployed. Most participants had independent bedrooms (88.5%) and rated their family's economic situation as moderate (62.9%). The mean level of spouse support was reported to be 6.96 (on a scale of 0-10). Table 1 shows the demographic characteristics of the participants.

On the Cognitive Schema Activated in Sexual Context Questionnaire (CSASCQ), the most common scenarios of sexual problems experienced by participants were Subjective Arousal Difficulty (11.8%) and Hypoactive Sexual Desire (9.6%). The most typical feelings that participants reported in these situations were sadness and anxiety, respectively (Table 2). The mean score of participants on the CSASCQ was 35.56 out of 140 (SD=14.68). After correcting the mean scores in the subscales, the Difference/Loneliness subscale had the highest mean (1.85 out of 5) compared to the other subscales. Therefore, the Difference/Loneliness subscale was the most dominant cognitive schema in the context of sexual problems among reproductive aged Iranian married women (Table 3).

Relationship between sexual cognitive schemas and sexual satisfaction

The mean score of participants on the Index of Sexual Satisfaction (ISS) was 96.80 out of 125 (SD=16.77). A total of 41 participants reported low sexual satisfaction (13.1%), 111 moderate sexual satisfaction (35.3%), and 161 high sexual satisfaction (51.4%). Findings of the study using ANOVA and Bonferroni post-hoc test indicated that the mean scores of cognitive sexual schemas (total score and subscales) were significantly different in participants with various levels of sexual satisfaction. The highest scores of cognitive schemas in the context of sexual problems were observed among participants with low sexual satisfaction. The lowest mean scores of cognitive schemas in the context of sexual problems were observed in individuals with higher sexual satisfaction. Table 3 illustrates the means and standard deviations of total scores and subscales of cognitive schemas in the context of sexual problems by different levels of sexual satisfaction.

Univariate and multivariate linear regression models were applied to investigate the relationship between cognitive sexual schemas and sexual satisfaction. In the univariate model, demographic characteristics were significantly associated with sexual satisfaction (Table 1). Therefore, all demographic characteristics along with the total score of CSASC were entered in a stepwise multivariate linear regression model. In all models, the total sexual satisfaction score was entered into the model as a dependent variable. In the multivariate model, spouse job, partner social support, education (university education vs. non-university education), job (housewife vs. employee), CSASC score, age, marriage duration, and economic status were all independent variables that played a significant role in predicting sexual satisfaction. More specifically, age ($\beta=0.33$), spouse social support ($\beta=0.23$), and spouse employment ($\beta=0.21$) had the highest regression coefficients in predicting sexual satisfaction. Cognitive schemas in the context of sexual problems in the univariate model had a regression coefficient of -0.57. Furthermore, in the multivariate model after controlling for socio-demographic characteristics, the coefficient was -0.14. In the univariate model in order to examine the relationship between sexual satisfaction and cognitive schemas in the context of sexual problems, the results of the regression model indicated that cognitive sexual schemas determined 76% of the variance in sexual satisfaction. By adding demographic features to the multivariate model, 98% of the variance in sexual satisfaction was explained.

Discussion

The purpose of the present study was to examine the association between sexual satisfaction and cognitive sexual schemas among Iranian married women of reproductive age. The most common scenarios experienced by participants in relation to sexual cognitive schemas were Subjective Arousal Difficulty and Hypoactive Sexual Desire. Moreover, the most emotional feelings that individuals reported in these areas were distress (for Subjective

Arousal Difficulty) and anxiety (for Hypoactive Sexual Desire). Difference/Loneliness was the most dominant subscale in the cognitive schema of sexual problems among married women of reproductive age. The highest scores of cognitive schemas in the context of sexual problems were observed among participants with low sexual satisfaction. Higher scores on CSASCQ indicated the greater negative schema activation among individuals with lower sexual satisfaction. Furthermore, the lowest mean scores on the CSASCQ were observed among individuals with higher sexual satisfaction.

In the study by Peixoto and Nobre (2015), women with sexual problems scored higher than women without sexual problems in the areas of Undesirability/Rejection, Incompetence, and Difference/Loneliness schemas. Women with negative sexual schemas report less interest, fewer sexual thoughts, and lower sexual arousal compared to women with positive sexual schemas in relation to their sexual activity (Andersen & Cyranowski, 1994). In addition, among women, sexual schemas predict sexual satisfaction (Carpenter, et al., 2009; Rellini and Meston, 2011).

According to the results of the multivariable model, age, duration of marriage, education (university versus non-university education), job (housewife versus employee), spouse occupation, perceived spouse's support, economic status, and sexual cognitive schemas were independent variables that played a significant role in predicting sexual satisfaction. More specifically, age, spouse social support, and spouse employment had the highest regression coefficients in predicting sexual satisfaction. Based on previous reviews, age, duration of marriage, and age gap between couples are the most important factors affecting women's sexual satisfaction (Ahmadi, Malekzadegan, & Hosseini, 2011; Shahhosseini, Gardeshi, Pourasghar, & Salehi, 2014; Tehrani, et al., 2012; Yoo, et al., 2014; Ziaee et al., 2014).

In the general population, it has been reported that increasing age leads to a reduction in sexual satisfaction (Shahhosseini, et al., 2014; Ahmadi, et al., 2011). As age increases, individuals' sexual activity is affected by the emergence of new roles in women's lives, such as caring for children and other responsibilities in the home and community (Shahhosseini, et al., 2014). The highest rate of sexual satisfaction has been reported among couples who have been married for less than 15 years (Ahmadi, et al., 2011). In various studies, women with higher education usually report higher sexual satisfaction, which may be due to increased knowledge and its effect on attitudes toward sex and sexual satisfaction (De Graaf, Vanwesenbeeck, & Meijer, 2015; Yoo, et al., 2014; Zhang, Fan, & Yip, 2015; Ziaee, et al., 2014). These results are consistent with the results obtained in the present study. However, a previous study indicated that women with doctoral and higher education has lower sexual satisfaction, as did women with education below a high school diploma (Abdoly & Pourmousavi, 2013).

In the present study, housewives experienced higher sexual satisfaction than working women. However, in various studies, working women report higher sexual satisfaction (Yoo, et al., 2014) and less sexual dysfunction (Zhang, et al., 2015) than housewives. Moreover, they state that working women usually have more satisfaction in their sexual functioning due to their financial independence and higher self-confidence. However, a study by Mohammad-Alizadeh et al. (2014) reported that housewives had a higher quality of sex life compared to working women. This may be due to the fact that working women, despite having financial independence and the resulting self-confidence, have more intellectual concerns due to conflicts in job and social responsibilities. In addition, fatigue from work, fewer hours of sleep, and more tasks associated with these mental conflicts can to some extent affect their performance and sexual satisfaction.

Another finding in the present study was the role of spouse support in increasing women's sexual satisfaction. In other words, women who received more support from their husbands experienced higher sexual satisfaction. Previous studies have also reported a

relationship between social support and sexual satisfaction (Henderson, et al., 2009; Penhollow, et al., 2009). Satisfaction in sexual relationships requires appropriate interpersonal communication and social skills and conflict resolution. These skills lead to increased self-confidence and self-esteem among women, and a sense of success in marriage and sex (Yoo, et al., 2014; Zegeye, et al., 2020). Mohammad-Alizadeh et al.'s (2014) study reported that females who were more satisfied with their husbands reported better sexual performance (Mohammad-Alizadeh-Charandabi, et al., 2014). Receiving support from the spouse in the marital relationship during stressful life events can help create a sense of connection in the couple and which can prevent separation from the partner. The available evidence shows that increasing the feeling of support in couples is associated with increased relationship satisfaction (Henderson, et al., 2009; Penhollow, et al., 2009; Yoo, et al., 2014; Zegeye, et al., 2020).

Husband's job and family economic status were other factors affecting women's sexual satisfaction in the present study. The spouse's employment can greatly affect the financial situation of the family and cause their spouses to have fewer financial worries. As a result, the quality of sexual life of individuals and consequently sexual satisfaction increases. Economic pressure is one of the causes of conflict between couples that can affect their sexual activity (Mohammad-Alizadeh-Charandabi, et al., 2014; Yela, 2000).

In addition, the results of the regression model in the present study indicated that sexual cognitive schemas explained 76% of the variance in sexual satisfaction, which by adding demographic features into the multivariate model, increased to 98%. Ziaei et al. (2014) showed that sexual education with emphasis on cognitive schemas was an effective way to promote sexual performance among married women. Brotto et al. (2016) suggest that when investigating couples' sexuality, many issues should be identified, such as attachment styles, childhood experiences, time to start sexual activity, personality, cognitive schemas, and sexual expectations. Previous studies also indicate a clear role for cognitive schemas in predicting sexual dysfunction (Andersen & Cyranowski, 1994; Andersen, et al., 1997; Carpenter, et al., 2009; Cyranowski & Andersen, 1998; Yela, 2000). It has been suggested that therapists should deal with cognitive schemas during their clinical examination and use cognitive reconstruction techniques that help alter cognitive schemas if they find a connection (Brotto, et al., 2016).

Strengths and limitations

Despite these limitations, the present study is the first to attempt to understand the relationship between early cognitive schemas activated in a sexual context with sexual satisfaction among married women of reproductive age. The use of univariable as well as multivariable linear regression models made it possible to examine this relationship more thoroughly adjusting for sociodemographic characteristics. The main limitations of the present study were that the design was cross-sectional (rather than longitudinal in nature), all of the data were self-report, all the data were collected online, the sample was self-selected, and the study population was married women only. The cross-sectional design meant that the determination of causal relationships between sexual satisfaction and cognitive schemas activated in a sexual context could not be determined. The use of self-report data meant that well-known methodological biases could not be discounted (e.g., social desirability biases). The fact that the data were collected online may have meant some potentially poorer participants (i.e., those who cannot afford internet access) were unable to participate in the study. However, data collected online tends to increase the veracity of responses compared to offline data collection. The self-selecting nature of the sample meant that the participants were not necessarily representative of all Iranian married women of reproductive age. The inclusion of self-selected married women also limits the generalization (e.g., the findings cannot be generalized to unmarried sexually active women). Moreover, further studies are needed in

order to examine the role of cognitive sexual schemas activated among women with specific sexual disorders.

Conclusion

According to the results of the present study, sexual cognitive schemas played a significant role in explaining the concept of sexual satisfaction among reproductive aged Iranian married women. Therefore, providers should pay attention to cognitive schemas during their clinical practice and use cognitive reconstruction techniques that help alter cognitive schemas if they find a connection. However, among the investigated socio-demographic variables in the present study, only the social support of the spouse can be modified. Sexual counseling providers should seek to identify strategies that help women receive increased support from their spouse as well as provide education and counseling to improve the support of the spouse.

Acknowledgment: We appreciate the great contribution of participants.

Disclosure Statement: There is no conflict of interest to be declared.

References

- Abdolmanafi, A., Winter, S., Ghorban Jahromi, R., Farahani, H., Peixoto, M. M., & Nobre, P. (2019). Psychometric properties of the Persian version of the Questionnaire of Cognitive Schema Activation in Sexual Context (QCSASC) in unsuccessful sexual situations. *Sexual and Relationship Therapy, 34*(1), 109-120.
- Abdoly, M., & Laleh P. (2013). The relationship between sexual satisfaction and education levels in women. *International Journal of Women's Health And Reproduction Sciences, 1*(2), 39-44.
- Abedini, M., Olfati, F., Oveisi, S., Bahrami, N., Astrologo, L., & Chan, Y. H. (2020). Examining the effect of a brief psychoeducation intervention based on self-regulation model on sexual satisfaction for women with breast cancer: A randomized controlled trial. *European Journal of Oncology Nursing, 47*, 101673.
- Ahmadi, Z., Malekzadegan, A., & Hosseini, A. (2011). Sexual satisfaction and its related factors in primigravidas. *Iran Journal of Nursing, 24*(71), 54-62.
- Andersen, B. L., & Cyranowski, J. M. (1994). Women's sexual self-schema. *Journal of Personality and Social Psychology, 67*(6), 1079- 1100.
- Andersen, B. L., & Cyranowski, J. M. (1995). Women's sexuality: Behaviors, responses, and individual differences. *Journal of Consulting and Clinical Psychology, 63*(6), 891-906.
- Andersen, B. L., Woods, X. A., & Copeland, L. J. (1997). Sexual self-schema and sexual morbidity among gynecologic cancer survivors. *Journal of Consulting and Clinical Psychology, 65*(2), 221-229.
- Bahrami, N., Yaghoob zadeh A, Sharif Nia H, Soliemani MA, & AA., H. (2016). Validity and reliability of the persian version of Larson sexual Satisfaction Questionnaire in couples. *Journal of Kerman University of Medical Sciences, 23*, 344-356.
- Bahrami, N., Yaghoobzadeh, A., Sharif Nia, H., Soliemani, M., & Haghdoost, A. (2016). Psychometric properties of the Persian version of Larsons sexual satisfaction questionnaire in a sample of Iranian infertile couples. *Iranian Journal of Epidemiology, 12*(2), 18-31.
- Beck, J. S. (2011). *Cognitive behavior therapy: Basics and beyond*: Guilford Press.
- Beck, J. S., & Beck, A. T. (1995). *Cognitive therapy: Basics and beyond*: Guilford Press.
- Brassard, A., Dupuy, E., Bergeron, S., & Shaver, P. R. (2015). Attachment insecurities and women's sexual function and satisfaction: The mediating roles of sexual self-esteem, sexual anxiety, and sexual assertiveness. *Journal of Sex Research, 52*(1), 110-119.

- Brotto, L., Atallah, S., Johnson-Agbakwu, C., Rosenbaum, T., Abdo, C., Byers, E. S., . . . Wylie, K. (2016). Psychological and interpersonal dimensions of sexual function and dysfunction. *Journal of Sexual Medicine, 13*(4), 538-571.
- Butzer, B., & Campbell, L. (2008). Adult attachment, sexual satisfaction, and relationship satisfaction: A study of married couples. *Personal Relationships, 15*(1), 141-154.
- Byers, E. S. (2005). Relationship satisfaction and sexual satisfaction: A longitudinal study of individuals in long-term relationships. *Journal of Sex Research, 42*(2), 113-118.
- Carpenter, K. M., Andersen, B. L., Fowler, J. M., & Maxwell, G. L. (2009). Sexual self schema as a moderator of sexual and psychological outcomes for gynecologic cancer survivors. *Archives of Sexual Behavior, 38*(5), 828-841.
- Carvalho, J., & Nobre, P. J. (2014). Early maladaptive schemas in convicted sexual offenders: Preliminary findings. *International Journal of Law and Psychiatry, 37*(2), pp. 210-216.
- Cyranowski, J. M. (1996). *Women's sexual self schemas: A cognitive approach to women's sexuality*. Ohio State University.
- Cyranowski, J. M., & Andersen, B. L. (1998). Schemas, sexuality, and romantic attachment. *Journal of Personality and Social Psychology, 74*(5), 1364-1379.
- De Graaf, H., Vanwesenbeeck, I., & Meijer, S. (2015). Educational differences in adolescents' sexual health: a pervasive phenomenon in a national Dutch sample. *Journal of Sex Research, 52*(7), 747-757.
- Dehghani, M., & Esmailian, N. (2017). Personality characteristics, early maladaptive schema and family function in couples initiating for divorce versus non-initiating ones. *Journal of Family Research, 2*(4), 575-592.
- Din, H. M., Akahbar, S. A. N., & Ibrahim, R. (2019). The association between depression and sexual satisfaction among Malay elderly in Malaysia. *Heliyon, 5*(6), e01940.
- Falah Chay, S. R., Zarei, E., & Normandy Pour, F. (2014). Investigating the relationship between maladaptive schemas and marital satisfaction in mothers of primary school children. *Journal of Biomedical and Life Sciences, 4*, 119-124.
- Gadassi, R., Bar-Nahum, L. E., Newhouse, S., Anderson, R., Heiman, J. R., Rafaeli, E., & Janssen, E. (2016). Perceived partner responsiveness mediates the association between sexual and marital satisfaction: A daily diary study in newlywed couples. *Archives of Sexual Behavior, 45*(1), 109-120.
- Hashemian, S. S., Shayan, S., Omidvar, A., & Modarres Gharavi, M. (2015). Relationship between early maladaptive schemas and sexual satisfaction in working women in Mashhad Ferdowsi University and Shiraz University, Iran. *Journal of Fundamentals of Mental Health, 17*(4), 192-196.
- Henderson, A. W., Lehavot, K., & Simoni, J. M. (2009). Ecological models of sexual satisfaction among lesbian/bisexual and heterosexual women. *Archives of Sexual Behavior, 38*(1), 50-65.
- Higgins, J. A., Trussell, J., Moore, N. B., & Davidson, J. K. (2010). Virginity lost, satisfaction gained? Physiological and psychological sexual satisfaction at heterosexual debut. *Journal of Sex Research, 47*(4), 384-394.
- Hoyt, M. A., & Carpenter, K. M. (2015). Sexual self-schema and depressive symptoms after prostate cancer. *Psycho-Oncology, 24*(4), 395-401.
- Hudson, W. W., Harrison, D. F., & Crosscup, P. C. (1981). A short-form scale to measure sexual discord in dyadic relationships. *Journal of Sex Research, 17*(2), 157-174.
- Ji, J., & Norling, A. M. (2004). Sexual satisfaction of married urban Chinese. *Journal of Developing Societies, 20*(1-2), 21-38.
- Larson, J. H., Anderson, S. M., Holman, T. B., & Niemann, B. K. (1998). A longitudinal study of the effects of premarital communication, relationship stability, and self-esteem on

- sexual satisfaction in the first year of marriage. *Journal of Sex & Marital Therapy*, 24(3), 193-206.
- Lawrance, K., & Byers, E. S. (1995). Sexual satisfaction in long-term heterosexual relationships: The interpersonal exchange model of sexual satisfaction. *Personal Relationships*, 2, 267-285.
- Manzary, L., Makvandi, B., & Khajevand Khoshli, A. (2014). Comparison between maladaptive schemas, marital conflicts and sexual satisfaction in nearly-divorced, divorced and normal individuals. *Journal of Psychology and Behavioral Studies*, 2(1), 39-49.
- McDermott, N. (2008). Early maladaptive schemas, attachment, negative affect and relationship satisfaction. *Theses and Dissertations*, 5(3), 738.
- Meston, C., & Trapnell, P. (2005). Outcomes assessment: Development and validation of a five-factor sexual satisfaction and distress scale for women: The Sexual Satisfaction Scale for Women (SSS-W). *Journal of Sexual Medicine*, 2(1), 66-81.
- Meston, C. M., Rellini, A. H., & Heiman, J. R. (2006). Women's history of sexual abuse, their sexuality, and sexual self-schemas. *Journal of Consulting and Clinical Psychology*, 74(2), 229-236.
- Mohammad-Alizadeh-Charandabi, S., Mirghafourvand, M., Asghari-Jafarabadi, M., Tavananezhad, N., & Karkhaneh, M. (2014). Modeling of socio-demographic predictors of sexual function in women of reproductive age. *Journal of Mazandaran University of Medical Sciences*, 23(110), 238-242.
- Nobre, P. J., & Pinto-Gouveia, J. (2009). Questionnaire of cognitive schema activation in sexual context: A measure to assess cognitive schemas activated in unsuccessful sexual situations. *Journal of Sex Research*, 46(5), 425-437.
- Oei, T. P., & Baranoff, J. (2007). Young Schema Questionnaire: Review of psychometric and measurement issues. *Australian Journal of Psychology*, 59(2), 78-86.
- Peixoto, M. M., & Nobre, P. (2015). Cognitive schemas activated in sexual context: A comparative study with homosexual and heterosexual men and women, with and without sexual problems. *Cognitive Therapy and Research*, 39(3), 390-402.
- Penhollow, T. M., Young, M., & Denny, G. (2009). Predictors of quality of life, sexual intercourse, and sexual satisfaction among active older adults. *American Journal of Health Education*, 40(1), 14-22.
- Rainer, H., & Smith, I. (2012). Education, communication and wellbeing: An application to sexual satisfaction. *Kyklos*, 65(4), 581-598.
- Reissing, E. D., Binik, Y. M., Khalif, S., Cohen, D., & Amsel, R. (2003). Etiological correlates of vaginismus: Sexual and physical abuse, sexual knowledge, sexual self-schema, and relationship adjustment. *Journal of Sex & Marital Therapy*, 29(1), 47-59.
- Rellini, A. H., & Meston, C. M. (2011). Sexual self-schemas, sexual dysfunction, and the sexual responses of women with a history of childhood sexual abuse. *Archives of Sexual Behavior*, 40(2), 351-362.
- Scott, V. C., Sandberg, J. G., Harper, J. M., & Miller, R. B. (2012). The impact of depressive symptoms and health on sexual satisfaction for older couples: Implications for clinicians. *Contemporary Family Therapy*, 34(3), 376-390.
- Shahhosseini, Z., Gardeshi, Z. H., Poursaghar, M., & Salehi, F. (2014). A review of affecting factors on sexual satisfaction in women. *Materia Socio-Medica*, 26(6), 378-381.
- Tehrani, F. R., Farahmand, M., Mehrabi, Y., Afzali, H. M., & Abedini, M. (2012). Prevalence of female sexual dysfunction and its correlated factors: A population based study. *Payesh (Health Monitor)*, 11(6), 869-875.

- Valsangkar, S., Bodhare, T., Bele, S., & Sai, S. (2011). An evaluation of the effect of infertility on marital, sexual satisfaction indices and health-related quality of life in women. *Journal of Human Reproductive Sciences, 4*(2), 80-85.
- Yela, C. (2000). Predictors of and factors related to loving and sexual satisfaction for men and women. *European Review of Applied Psychology/Revue Européenne de Psychologie Appliquée, 50*(1), 235–243.
- Yoo, H., Bartle-Haring, S., Day, R. D., & Gangamma, R. (2014). Couple communication, emotional and sexual intimacy, and relationship satisfaction. *Journal of Sex & Marital Therapy, 40*(4), 275-293.
- Young, J. E. (1999). *Cognitive therapy for personality disorders: A schema-focused approach*. Professional Resource Press/Professional Resource Exchange.
- Young, J. E., & Gluhoski, V. (1997). *A schema-focused perspective on satisfaction in close relationships*. In: R. J. Sternberg & M. Hojjat (Eds.), *Satisfaction in close relationships* (pp. 356–381). The Guilford Press.
- Young, M., Denny, G., Young, T., & Luquis, R. (2000). Sexual satisfaction among married women age 50 and older. *Psychological Reports, 86*(3), 1107-1122.
- Zegeye, B., Woldeamanuel, G. G., Negash, W., & Shibre, G. (2020). Sexual satisfaction and its associated factors among married women in northern Ethiopia. *Ethiopian Journal of Health Sciences, 30*(2), 169-178.
- Zhang, H., Fan, S., & Yip, P. S. (2015). Sexual dysfunction among reproductive-aged Chinese married women in Hong Kong: Prevalence, risk factors, and associated consequences. *Journal of Sexual Medicine, 12*(3), 738-745.
- Ziaee, P., Sepehri Shamlou, z., & Mashhadi, A. (2014). The effectiveness of sexual education Focused on cognitive schemas, on the improvement of sexual functioning among female married students. *Evidence Based Care, 4*(2), 73-82.
- Ziaee, T., Jannati, Y., Mobasheri, E., Taghavi, T., Abdollahi, H., Modanloo, M., & Behnampour, N. (2014). The relationship between marital and sexual satisfaction among married women employees at Golestan University of Medical Sciences, Iran. *Iranian Journal of Psychiatry and Behavioral Sciences, 8*(2), 44-51.

Table 1. Distribution of Scio-demographic variables among participants and results of univariable logistic regression analysis considering sexual satisfaction as dependent variable

			Mean (SD)	Results of Univariable linear regression analysis		
				B	SE	<i>p</i>
Women's age (year)			36.7 (7.3)	2.54	0.04	<0.001
Spouse's age (year)			40.6 (8.2)	2.29	0.04	<0.001
Marriage duration (years)			12.4 (7.9)	5.5	0.22	<0.001
Number of children (0-4)			1.2 (0.8)	54.32	2.34	<0.001
Perceived spouse's support (0-10)			7 (2.7)	12.49	0.23	<0.001
Educational status						
Educational status	Women	Non-academic	59 (18.8)	1		
		Academic	254 (81.2)	51.17	0.78	<0.001
	Spouse	Non-academic	79 (25.3)	1		
		Academic	234 (74.8)	52.45	0.85	<0.001
Job						
Job	Women	Employed	119 (38)	1		
		housewife	194 (62)	62.33	1.41	<0.001
	Spouse	Unemployed	8 (2.6)	1		
		Employed	305 (97.4)	96.91	1.28	<0.001
Having separate bedroom						
Having separate bedroom		No	36 (11.5)	1		
		Yes	277 (88.5)	96.27	2.29	<0.001
Perceived economic status						
Perceived economic status		Poor	7 (2.2)	1		
		Moderate	197 (62.9)	96.29	1.54	<0.001
		Good	109 (34.8)	98.06	2.07	<0.001

Table 2. Participants' experience regarding most frequent sexual scenarios and related affection				
Frequency of occurring sexual scenarios: No. (%)				
	Hypoactive Sexual Desire	Subjective Arousal Difficulty	Vaginismus	Orgasmic Disorder
Never happened	157 (50.2)	135 (43.1)	197 (62.9)	153 (48.9)
Seldom	62 (19.8)	80 (25.6)	59 (18.8)	82 (26.2)
Sometimes	45 (14.4)	32 (10.2)	25 (8.0)	32 (10.2)
Frequently	19 (6.1)	29 (9.3)	15 (4.8)	20 (6.4)
Happened often	30 (9.6)	37 (11.8)	17 (5.4)	26 (8.3)
Affection toward often occurring sexual scenarios (No.)				
Worry	16	15	11	11
Sadness	9	19	11	17
Disillusion	5	10	4	6
Fear	5	7	4	4
Guilt	3	3	3	3
Shame	3	5	3	3
Anger	10	15	6	7
Hurt	4	7	5	5
Pleasure	9	10	8	6
Satisfaction	9	11	6	3

Note: Frequency of four sexual episodes related to common sexual dysfunctions including: hypoactive sexual desire disorder, orgasmic disorder, sexual pain, and subjective arousal difficulties were rated (1 = Never occurs; 2= Seldom; 3= Sometimes; 4= Frequently; 5 = Happens often).
Secondly, participants emotions aroused by the episode were assessed based on a list of ten emotions comprising worry, sadness, disillusion, fear, guilt, shame, anger, hurt, pleasure, and satisfaction.

Table 3. Mean scores of sexual schemas and subscale scores

Sexual Satisfaction categories	No. (%)	Sexual schema subscales and total scores Mean (SD)					
		Undesirability /Rejection (5-25)	Incompetence (9-45)	Self-depreciation (4-20)	Difference/ Loneliness (3-15)	Helpless (4-20)	Total (25-125)
Low	41 (13.1)	10.6 (5.7)	16.1 (7.4)	8.3 (4.1)	7.6 (3.4)	9.4 (3.5)	52.1 (19.6)
Moderate	111 (35.5)	7.54 (3.7)	12.3 (5)	5.9 (2.6)	5.9 (2.6)	7.3 (3.8)	38.9 (14.3)
High	161 (51.4)	5.6 (2.1)	9.71 (3)	4.3 (1.3)	4.8 (2)	4.7 (1.7)	29 (7.9)
Total-uncorrected	313 (100)	7 (3.7)	11.48 (5)	5.4 (2.7)	5.6 (2.6)	6.2 (3.3)	35.6 (14.7)
Total-uncorrected*		1.4 (0.8)	1.28 (0.6)	1.3 (0.7)	1.9 (0.87)	1.6 (0.8)	1.4 (0.6)
Results of ANOVA test comparing groups**	F statistics	39.9	35.9	50.9	24.5	56.7	62.1
	p-value	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

* Mean score of each subscale was calculated by summing the items based on the original instruction. Due to unequal number of items in each subscale, the mean of each subscale was corrected by dividing the sum scores to number of items for each subscale. This correction was carried out to have comparable scores.

** Based on the Bonferroni post-hoc results, all groups were significantly different.

Table 4. Results of multivariable logistic regression analysis considering sexual satisfaction as dependent variable

Model	Predictors	Unstandardized Coefficients		Standardized Coefficients	Sig.	95 % CI for B		Model Summary	
		B	Std. Error	Beta		Lower Bound	Upper Bound	R	Adjusted R ²
Sexual Satisfaction									
Unadjusted	Sexual schema	2.23	0.07	0.87	<0.001	-0.75	-0.54	0.87	0.76
Adjusted	Spouse job	21.30	4.95	0.21	<0.001	11.56	31.04	0.99	0.98
	Perceived spouse's support	3.06	0.31	0.23	<0.001	2.45	3.67		
	Education	8.46	2.16	0.16	<0.001	4.21	12.72		
	Job	9.76	1.61	0.15	<0.001	6.60	12.93		
	Sexual schema	-0.36	0.06	-0.14	<0.001	-0.48	-0.25		
	Age	0.85	0.18	0.33	<0.001	0.50	1.21		
	Marriage duration	-0.51	0.19	-0.08	0.006	-0.88	-0.15		
	Economic status (medium vs. poor)	14.69	5.33	0.12	0.006	4.20	25.19		
Economic status (good vs. poor)	12.21	5.56	0.07	0.029	1.28	23.15			