



Explaining the structural model of predicting sexual anxiety based on self-sexual schemas by examining the mediating role of emotional regulation in men with heart failure

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Background and Aim: sexual relationship anxiety, which refers to the degree of fear of discussing one's sexual relations with another, is an issue that has not been studied in detail as much as others; Therefore, the explanation of the structural model of predicting sexual anxiety was based on self-sexual schemas by examining the mediating role of emotional regulation in men with heart failure. **Methods:** The current research is a descriptive and correlational quantitative research in terms of fundamental-applicative purpose and in terms of data collection and the nature of the title. The statistical population of this research was men with heart failure who referred to Martyr Dr. Lavasani Hospital in Tehran in 2023. The sampling method in this research was non-random and accessible, and 300 men were selected. In this research, the sexual relationship anxiety questionnaire of Davis (2006), the sexual schema scale of Andersen and Siranoski (1994) and the emotional regulation of Gratz et al. (2006) were used; To analyze the data, Pearson's correlation coefficient test and path analysis were used using spss-22 and amos-18 software. **Results:** The results showed that the strongest direct effect on sexual relationship anxiety was related to emotional regulation with an effect size of -0.50, followed by self-sexual schema with an effect size of 0.47. The result of the direct effects test showed that these effects are significant at the confidence level of at least 95% ($p < 0.05$). **Conclusion:** The confirmation of the mediating role of variables shows that in the pathology and treatment of male sexual deviance, paying attention to psychological aspects, especially cognitive and emotional aspects, is as important as paying attention to its physiological aspects. The mediating role of emotional and cognitive variables in the dual control model needs more attention.



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Introduction

Heart failure is a clinical syndrome that occurs as a result of the inability of the heart to pump the necessary amounts of oxygenated blood to meet the body's metabolic needs. Heart failure has two types, systolic and diastolic. Systolic heart failure occurs due to the inability of the heart to adequately pump blood, and diastolic heart failure occurs due to the inability of the ventricles to relax and fill during diastole (Zeighmi Mohammadi et al., 2020). Nearly five million people in the United States have heart failure, and 500,000 new cases are added every year (Davis, Hobbs, & Lipp, 2022). The heart's inability to supply blood causes many symptoms such as shortness of breath, fatigue, dizziness, angina pectoris, edema and ascites. Intolerance of effortful activity, fatigue and shortness of breath cause a significant disturbance in the quality of life and functional ability of these patients. Also, disruption in performing normal life activities, reduction of independence and dependence on others in performing self-care measures, social isolation, disruption in sexual relations and changes in the patient's family and social roles in life (Shujaei, 2019). Sexual function is one of the important aspects of quality of life. Sexual dysfunction affects the quality of life of patients with heart failure and reduces it (Jarsma, 2022) and leads to a decrease in libido, a decrease in the frequency of sexual intercourse, dissatisfaction with sexual performance, and ultimately sexual anxiety (Schwartz et al., 2016).

Sexual anxiety, as one of the important and influential factors, can make sexual activity difficult (Barlow, 1986). On the other hand, sexual communication anxiety, which refers to the degree of fear of discussing one's sexual relations with another, is an issue that has not been studied in as much detail as others. Despite the fact that sexual desires are innate and involuntary, sexual attitudes and behaviors are learned; Therefore, similar sexual activities can have different meanings for different people and even change from one time to another for the same person (Clayton, 2010). Therefore, any disorder that leads to inconsistency and as a result, lack of satisfaction with sex, can affect other aspects of life.

In the meantime, one of the issues that have been discussed in recent years, especially in Iran, regarding sexual problems and related

issues is the attention and importance of the role of schemas in sexual issues. One of the types of these schemas is the self-sexual schema, which Beck and Alford mentioned in their first writings about the concept of sexual schemas (Beck and Alford, 2019). This schema is a cognitive generalization about sexual aspects that originates from a person's past experiences and manifests itself in current experiences. Sexual self-schema is also effective in processing social information related to sexual act and directs sexual behavior. A person's sexual self-schema is a historical representation of his sexual life and guides the feedback of a person's sexual behaviors, decisions, and judgments. Sexual self-schema includes a wide range of sexual dimensions, including sexual experiences and tendencies, sexual behavior and the representation of a person's sexual identity. This schema can be a strong factor in women's sexual adaptation, regardless of age. Self-concept and positive sexual feedback of oneself can lead to satisfactory sexual action, and negative sexual views, along with conflict and weakness, can lead to distress, problems and sexual disorders. This schema is defined as a view about one's sexual aspects. Researchers have found that a person's sexual schema can influence cognitive processing and be an effective factor in the rules of responding to sexual information (Cyranoski and Anderson, 2014). Meanwhile, it can be said that schemas affect various factors such as activity and sexual satisfaction in the process of sexual life cycle, as we mentioned above. In other words, a very important and key point in this research is that sexual schemas directly affect sexual activity on the one hand and sexual activity directly affects sexual satisfaction on the other hand. That is, in fact, in a linear relationship, schema affects activity and activity affects satisfaction (Rosen, 2000). Women who have positive sex schemas about sex feel better about sexual experiences and ultimately sexual activity compared to women who have negative sex schemas. This positive feeling ultimately leads them to engage in more satisfying sex (Middleton, Kafel, & Hyman, 2018).

Emotional regulation is also one of the important psychological structures that has attracted a lot of theoretical and experimental attention in the last two decades (Dennis and Hajkic, 2019). In this research, we will try to

investigate the mediating role of this variable. Emotional regulation is a variable that indicates emotional dysregulation and a defect in emotional regulation. In other words, emotion regulation is a transdiagnostic and transtheoretical process that affects a wide range of psychopathology from the perspective of diverse theoretical approaches and refers to activities that allow people to monitor, evaluate, and adjust the nature and duration of emotional responses. (Johnson, 2010). Gratz and Romer (2004) defined emotion regulation as including four components: awareness of emotions and their understanding, acceptance of emotions, and the ability to control impulsive behaviors and behave in accordance with desirable goals when negative emotions are experienced. Having defects or deficits in emotion regulation has been associated with higher levels of psychopathology, including anxiety symptoms (Amstädter, 2018), and in people with gender dissatisfaction, the level of anxiety is higher than in normal people (American Psychiatric Association, 2023). On the other hand, research shows that these people use inefficient and emotion-oriented ways to deal with stress (Colizzi et al., 2013; Vitelli and Riccardi, 2020; Rezaei et al., 2016). Differences in emotion regulation ability and strategy can be considered more or less as far as reducing or maintaining distress (Hoffman, 2014). In a longitudinal study with couples, reduced negative emotions in men (ie, faster reductions in emotional experience and behavior following negative emotional arousal) were cross-sectionally associated with greater sexual satisfaction in men (Blach et al., 2014). Considering that negative emotions in sexual situations are associated with a decrease in desire and arousal as well as an increase in sexual distress, it can be concluded that a deficiency in the regulation of negative emotions may be associated with a decrease in the quality and pleasure of sex in men with sexual problems and their partners. (Nobre et al., 2008). Therefore, difficulty in regulating negative emotions is recognized as a key mechanism influencing the relationship of physiological factors (eg, sexual inhibition, sexual arousal) on sexual performance in a recent model of men's sexual anxiety (Vasconcelos et al., 2020). In addition, compared to the control group, men who have pelvic pain and sexual arousal or low desire have much more problems in regulating

emotions (Sarin et al., 2016). Researchers found that during sexual activity, men with sexual anxiety had significantly more thoughts about defeating partner abuse and ignored thoughts with erotic content; While men suffering from sexual intercourse anxiety, their thoughts are significantly more related to erection concerns and sexual intercourse, predicting failure and its consequences. For both men and women, these automatic thoughts are associated with negative emotions such as sadness, frustration, guilt, anger, as well as lack of pleasure and satisfaction. According to Nobre's (2013) emotional-cognitive model of sexual anxiety, both automatic thoughts and emotional responses during sexual activity play a significant role in determining negative mood in men and women. On the other hand, according to Beck (1996), stress and anxiety come with negative thoughts and distortion in the interpretation of the situation and stimuli, and these thoughts originate from the activation of negative beliefs accumulated in long-term memory (negative schemas).

There are many conflicting discussions about whether or not sexual activity puts pressure on the heart that leads to problems in heart patients. However, an issue that is more important is the mental pressure caused by the disease and the subsequent problems that may arise in the anxiety of sex and other variables; Especially in men, due to the main stereotypical role in the initiation and continuation of sexual intercourse, it opens the ground for more research in this field. In Iran, due to cultural issues, the gap in research on sexual behavior is greater than in other countries. Even though in recent years, researchers have turned to more studies, but still no comprehensive research has been done regarding the self-sexual schema and other variables of this research related to this topic. The aim of this research was to determine the fit of the presented structural model in the relationship between sexual relationship anxiety based on sexual self-schemas with the mediating role of emotional regulation in men with heart failure.

Method

The method of the current research was descriptive-correlation of structural equation modeling. The statistical population of this research was men with heart failure who referred to Shahid Dr. Lavasani Hospital in Tehran in the first half of 2023. 300 of these

men were selected by available sampling according to Stevens (1998) and questionnaires were provided to them. The sampling period lasted 95 days according to all the conditions. To analyze the data, Pearson's correlation coefficient test and path analysis were used using spss-22 and amos-18 software. It is necessary to explain that one of the ethical principles based on the American Psychological Association is not to violate the rights of sample people in research and respect their human rights. It should be explained to the sample people in the research that participation in the research is not dangerous for them or has minimal risk. A complete and useful explanation for the participants to prepare the research, obtaining informed consent from them, the optionality of the research, making the results available to sample people if desired are other ethical principles that must be observed in this research.

Materials

1. Sexual Anxiety Questionnaire: This questionnaire was created by Davis in 2006 as an 18-item scale to assess sexual relationship anxiety. (Davis et al., 2006). Responding to the statements is based on a five-point Likert scale that is scored from 1 to 5, which ranges from 18 to 90. Obtaining a higher score was considered a sign of sexual anxiety and vice versa. The internal reliability of Cronbach's alpha method for this scale has been reported as 0.93, and another study reported its test-retest reliability as 0.83 and its validity as acceptable (Anderson & Siranoski, 2010). This scale was used in a study in Iran, and its reliability was 0.75 by Cronbach's alpha method, and its correlation with the sexual entitlement test was calculated at 0.60 to check the construct validity, and its content validity was also confirmed by psychology and counseling professors. (Qaysari and Karimian, 2013). The reliability of this scale in the present study was obtained using Cronbach's alpha coefficient of 0.706.

2. Andersen and Cyranoski sexual schema scale (men): The sexual schema scale of this questionnaire was prepared by (Anderson and Cyranoski, 1994) and has separate female and male forms. Male sexual schema scale (Anderson, Cyranowski and Spindle, 1999) consists of 45 traits. For the male scale, the subscales include: passionate-affectionate, powerful-aggressive, intellectual-progressive.

And its feminine form includes: passionate-romantic, frank-comfortable, shy-cautious. The subject must indicate on a 7-point Likert scale (from not at all: 0 to very much: 6) how much each of these traits describes him and is reflected in his personality. Since people talk freely about their sexual issues, 18 adjectives have been used as fillers in this test to hide the nature of the main characteristic evaluated from the subjects. In the research (Moradi, 2011), each form was validated on twice the number of questions, and its Cronbach's alpha coefficient is 0.73 for women and 0.84 for men.

3. Emotional Regulation Questionnaire

(DERS): This scale is a self-report index to evaluate difficulties in emotional regulation and has 36 statements and 6 subscales. It measures the level of a person's emotional regulation deficiency and insufficiency in five levels from 1 (almost never) to 5 (almost always) in six contexts as follows: Rejection of negative emotions, difficulty in performing goal-directed behaviors in times of helplessness, difficulty in controlling impulsive behaviors in times of helplessness, limited access to effective emotion regulation strategies, lack of emotional awareness and lack of Emotional transparency. The psychometric properties of the emotion regulation difficulty scale, including internal consistency, retest reliability and construct validity, have been confirmed in clinical and non-clinical samples in foreign studies. (Gertz et al., 2006; Gertz and Romer, 2004; Gertz and Toole, 2010). The psychometric properties of the Persian version of the emotion regulation difficulty scale in clinical (n=187) and non-clinical (n = 763) samples have been investigated and confirmed (Bashart, 2007; Bashart & Bazazian, 2014). From the total score of six sub-scales of the test, the total score of each person is calculated for the difficulty of emotion regulation. A higher score in each of the subscales and the whole scale is a sign of more difficulty in regulating emotion.

Implementation

In this research, 300 of these men were selected by sampling method and questionnaires were provided to them. The method of data collection, the use of the desired questionnaires was given to the participants by the researcher, and while announcing the results confidentially, they were asked to answer each and every question honestly and completely. Considering

all the conditions, the sampling period lasted 4 to 5 months. After collecting the data, the subjects' questionnaires were analyzed with appropriate statistical methods.

Results

In the demographic characteristics section, 18.4% of men were between 30 and 35 years old, 27% between 36 and 40 years old, 23.9% between 41 and 45 years old, and 30.7% were older than 45 years old. Undergraduate education with 43.7% and postgraduate education with 8.9% respectively had the

highest and lowest percentages in the research sample. The minimum duration of marriage was 3 years, and most of the respondents, equal to 81.9% of the respondents, had a history of living together between 3 and 10 years. Regarding the number of children, 40.6% had one child, 39.6% had two children, 13.3% had three children, and 6.6% had more than three children. The age range of most of the respondents was 5 years or less (45%) and between 6 and 10 years (36%).

Table 1. Descriptive findings of research variables

Variables	Mean	SD	Skewness	Kurtosis
Sexual-self schema	133/52	20/81	0/120	0/432
Emotion Regulation	45/63	10/16	-0/311	-0/662
Sexual anxiety	37/49	9/77	-0/276	0/123

The above table shows the descriptive findings of the research variables. Skewness and kurtosis numbers are between -2 and -2, which means

that the data is normal. Therefore, Pearson's parametric test was used.

Table 2. Pearson correlation matrix between research variables in the group of women (n=430)

	1	2	3
1. Self-sexual schema	1		
2. Emotional regulation	-31.0**	1	
3. Sexual anxiety	51.0**	-55.0**	1

The above table shows that the relationship between self-sexual schema and negative emotional regulation is significant (p<0.01); The relationship between emotion regulation

and sexual intercourse anxiety is negative and significant (p<0.01); The relationship between sexual self-schema and sexual intercourse anxiety is positive and significant (p<0.01).

Table 4. Fit model indexes

Index	Acceptable fit value	value
R²	> 0.033	47.0
GFI	> 0.90	92.0
RMSEA	<0.08	083.0
CFI	>0.90	93.0
NFI	>0.90	95.0
IFI	>0.90	88.0
AGFI	>0.90	91.0
PGFI	>0.70	77.0
Chi-Square /df	1 < x < 5	3.66

Examining the fit indices in Table 3 showed that, in general, this model had a relatively good fit. In this model, apart from the two fit indices RMSEA and IFI, which had an average value,

other fit indices had a suitable value. In general, it can be concluded that the fit indices of the model had a suitable value.

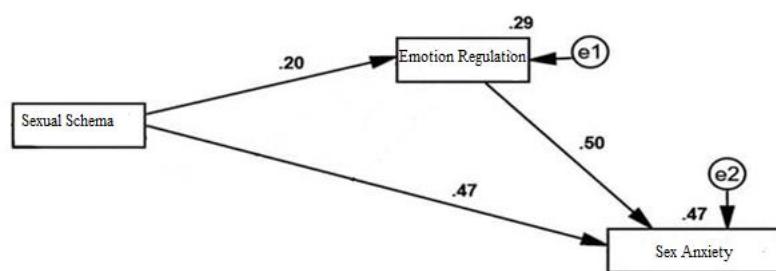


Figure 1. Experimental research model in the case of standard path coefficients

Figure (1) shows the intensity of the influence of the variables on each other. Examining the intensity of the coefficients showed that the strongest direct effect on sexual relationship anxiety was related to emotional regulation with an effect factor of -0.50, followed by self-sexual schema with an effect factor of 0.47. The coefficient of determination of sexual

relationship anxiety was equal to 0.47, which showed that the predictive variable of the model could explain 47% of the variance of sexual relationship anxiety. Table (3) shows the results of the direct effects test with the path analysis test. All the direct effects are shown and these effects are significant at the confidence level of at least 95% ($p < 0.05$).

Table 4. Test results of direct effects in the model

Model	Path	Beta	t	p
	Sexual self-schema -> sexual intercourse anxiety	0/47	11/62	<0/001
	Self-sexual schema -> emotional regulation	0/20	3/97	<0/001
	Emotional regulation -> sexual intercourse anxiety	0/50	12/82	<0/001

The results of table (3) showed that the direct effect of the two variables of sexual self-schema and emotional regulation on sexual relationship anxiety was confirmed ($p < 0.05$). The direction of the effect of sexual self-schema on sexual intercourse anxiety was positive, and the direction of the effect of emotional regulation on sexual intercourse anxiety was positive. The strongest effect on sexual anxiety was related to emotional regulation with a coefficient of -0.50 and self-sexual schema with a coefficient of 0.47. The results showed that the direct effect of the independent variable of self-sexual schema on the mediating variable of emotional regulation was confirmed ($p < 0.05$). Sobel's method was used to investigate mediation. The results of the Sobel test showed that the mediating role of emotional regulation was confirmed in the relationship between the variable of self-sexual schema and the dependent variable of sexual relationship anxiety ($p < 0.05$).

Conclusion

The aim of this study was to explain the structural model of predicting sexual anxiety based on self-sexual schemas by examining the mediating role of emotional regulation in men

with heart failure. The results showed that the strongest direct effect on sexual relationship anxiety was related to emotional regulation with an influence coefficient of -0.50, followed by self-sexual schema with an influence coefficient of 0.47. The result of the direct effects test showed that these effects are significant at the confidence level of at least 95% ($p < 0.05$). In explaining these findings, it can be said that men with heart failure who experience sexual problems such as sexual intercourse anxiety and orgasm problems should evaluate their level of arousal and sexual anxiety according to their sexual anxiety. Research shows that men with heart failure who have higher sexual anxiety face problems in sexual performance and orgasm problems, and men with heart failure who have higher sexual arousal tend to engage in risky sexual behaviors. (Sarin et al., 2016). Nobre (2013) suggests that men with gender biases significantly activate different loneliness schemas. It seems that these men attribute failure in sexual performance both to their personal disabilities and dimensions of their worthlessness, and to interpersonal domains such as loneliness. Men who hold more negative sex schemas have less emotional involvement

with sexual partners, greater avoidance of emotional intimacy, and higher anxiety about being unloved or abandoned (Kranowski & Andersen, 1988). In addition, studies have shown that men with heart failure who have negative sexual self-schemas have less frequency and variety of sexual activity with sexual partners and brief sexual encounters throughout life (Andersen et al., 1999). If a woman has a negative sexual schema, a sexual stimulus may be appraised as predominantly non-sexual or negative, and therefore the subjective reproductive response will not be activated, and her arousal may be inhibited. Depressed mood, and more negative schemas in general, may induce negative sexual schemas, which in turn inhibit sexual response and lead to sexual anxiety (Kafel et al., 2006). Hindmarch (1998), stated that depressed people have a vulnerable ability to use sexual cues correctly because the cues do not have the same capacity and as a result they are less able to respond to these cues as non-depressed people.

On the other hand, confirming the fit of the hypothetical model and the mediating role of problems in emotion regulation in this model, indicates that problems in emotion regulation play an important role in the formation of men's sexual relationship anxiety. In explaining this finding, it can be said that the difficulty of regulating negative emotions interferes with purposeful behavior (Gratz & Toole, 2010); It is also possible that a person tries to establish and interact sexually with his sexual partner who has high sexual anxiety and low sexual arousal, and due to the difference in the emotional and sexual reactions of the person, due to the inability to regulate emotions, they show poor sexual performance. (Mark, 2015). Therefore, it can be said that when a person experiences inconsistent schemas and emotional dysregulation due to the imbalance of sexual inhibition and sexual arousal, he will suffer from psychological disorders such as anxiety and depression. It increases anxiety, worry, fear of sexual life and sexual behaviors of men. Anxiety related to sex can cause problems in the natural cycle of sex. When there are no specific sexual problems related to anxiety, it is still possible that a high level of anxiety causes some cognitive problems, such as dizziness, etc., which leads to a weakening of sexual relations (Yazdan Panahi et al., 2018). Studies conducted in the laboratory on men without sexual anxiety

showed that cognitive disturbance unrelated to sexual relations can reduce physiological and mental arousal and sexual excitement (Bradford and Maston, 2006). Therefore, the data of this study supports the theoretical assumption of the dual control model that certain characteristics of SE and SI constitute predisposing areas or risk factors for the occurrence of low sexual performance. In addition, these findings should be carefully considered, the most important finding of this research is the confirmation of the mediating role of activated cognitive schemas in the sexual context of emotional dysregulation and negative mood. For the first time, this study investigated the cognitive schemas activated in the sexual context of emotional dysregulation and negative mood as mediating factors between inhibition and sexual arousal and sexual performance of men. Confirmation of the fit of the hypothesized model showed that cognitive schemas and emotional dysregulation play a role in the formation of the pathology of men's sexual performance. The purpose of evaluating this model is to evaluate the cognitive and emotional aspect along with the physiological aspect. The confirmation of the mediating role of variables shows that in the pathology and treatment of male sexual deviance, paying attention to psychological aspects, especially cognitive and emotional aspects, is as important as paying attention to its physiological aspects. In general, it is concluded that the evaluation of the mediating role of emotional and cognitive variables in the dual control model needs more attention.

Although the findings supported the hypothesized research model, the results of this research should be interpreted considering its limitations. First, the current study was conducted on a relatively homogeneous population; Therefore, there are limitations in generalizing the results to other populations. On the other hand, although many researchers support the conceptualization of mental disorders in a dimensional structure and believe that the results obtained from clinical and non-clinical environments are largely consistent. Caution should be exercised in generalizing the results of this study to the clinical population. Another limitation is that the cross-sectional nature of the current study prevents causal inferences and accurate knowledge of the true nature of the relationships between research

variables. However, other alternatives cannot be ruled out based on this study. Finally, in this study, only one self-measurement tool was used to evaluate each of the variables. The use of various measurement methods can help to better conceptualize the variable.

Conflict of Interest

According to the authors, this article has no financial sponsor or conflict of interest.

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