

THE RELATIONSHIP BETWEEN PSYCHOLOGICAL FACTORS (ANXIETY AND STRESS) WITH MIGRAINE HEADACHES AND MENSTRUAL PAIN IN MARRIED WOMEN 40-25 YEARS OF BUSHEHR

Abdollah Shafiyabady¹,*Samira Shakeri², Safieh Abdolahi², Somayeh Sh Akeri³ and Salva Shamseddini Lory⁴

¹Department of Guidance and Counseling, Allame Tabatabai University, Tehran, Iran

²Department of Clinical Psychology, Kish International Branch, Islamic Azad University, Kish Island, Iran

³Department of Clinical Psychology, Kish International Branch, Islamic Azad University, Kish Island, Iran

³Department of Educational Psychology, Bushehr, Iran

⁴Department of Counseling, Islamic Azad University, Roudehen Branch, Young Researchers Club, Roudehen, Iran

*Author for Correspondence

ABSTRACT

The purpose of this study was examined the relationship between psychological factors (anxiety and stress) in women with migraine headaches and menstrual pain were admitted to hospital in Bushehr. The method of this study is Non-experimental study of the correlation. To measure the variables used by Visual scale of pain and anxiety, stress and depression questionnaire. The sampling was one-stage cluster. Namely, the province of hospitals in Bushehr, elected the Fatemeh Zahra hospital. And then, 122 patients (56 n=migraine, 66n= menstrual pain) were randomly selected according to Morgan content among married women 40-25 years old and used to treat menstrual pain and migraines are referred to this hospital (65 n= migraine, 80n= menstrual pain). Data analysis using Pearson correlation and multiple regressions using 18 SPSS software is used. There is a positive relationship between anxieties with menstrual cramps. There is a positive relationship between anxieties with menstrual cramps. There is a positive relationship between stresses with menstrual cramps. There isn't a positive relationship between anxieties with migraine. There isn't a positive relationship between stresses with migraine.

Keywords: Anxiety, Stress, Psychological Factors, Menstrual Pains and Migraine

INTRODUCTION

The pain is considered as the most important sensory quality in humans and informs him about damaging stimuli in organism and leads to physician visit. Understanding the pain mechanisms and ways of its prevention and treatment has entered a new stage in recent years and learning about them can alleviate most of the patients' unnecessary pains (Yousefzadeh, 2002). The studies indicate that the anxiety and stress have negative effects on the body and this relationship is mutual mental, so that the physical illnesses and health are correlated with the level of anxiety and stress. The pessimistic and anxious individuals have higher blood pressure than the optimistic, but the optimism leads to the individual mental and physical health and development (Karen, 2003; Peterson, 2000).

The stress leads to a series of physiological-histological and behavioral changes. These changes enable the individual to be adapted to stressful situation. The stressors activate the hypothalamus, pituitary, adrenal and sympathetic systems (Tilbrook *et al.*, 2000). The endogenous analgesic system is one of the systems influenced by stress. The stress activates this system and thus relieves the pain (Gamoro *et al.*, 2008; Vendruscolo *et al.*, 2008).

The migraine as the most common form of chronic headache and intervals without pain and sometimes with duration of 4-72 hours is diagnosed with the symptoms such as zigzagorstar lines in visual field before the headache attack, and the symptoms such as nausea, vomiting, photophobia or phonophobia (Martin, 2006). This headache is 2-3 times the men (Lyngberg *et al.*, 2005) and is put in the nineteenth

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rank of debilitating disorders according to the report of the World Health Organization (WHO) (Kachoui and Ameli, 2006). Despite the fact that the same pathophysiology cannot be considered for this disease, the inheritance is involved in it and some foods and mental attacks are considered as its motivators (Greenberg *et al.*, 2009). Due to the unknown effects of headaches on the patient's psychological life and the role of stress on startup and exacerbation of headaches (Davis *et al.*, 1998; Spierings *et al.*, 2000), the psychological treatments of headache have been considered since the late 1970s (Gauthier *et al.*, 1996). The results of studies indicate that 47.2 percent of migraine symptoms are stimulated by physical activities (Bender *et al.*, 2000; Gusi *et al.*, 2001). The studies indicate that the level and rate of stress undergone by a person is associated with the migraine headache (Wacogan *et al.*, 2003; Potter and Perry, 2005). The menstruation is a developmental stage in women life. This event is a biological, psychological and social event and a young woman needs to understand how this event happens in this era. Therefore, the psychological and social support and health awareness are among the important principles special for this era (Black and Jacobs, 2007). On the other hand, the menstrual disorders such as the pain and symptoms of premenstrual syndrome (PMS) lead to the disability for some days which can have undesirable effects in some individuals (Berek *et al.*, 1996). The anxiety, stress, and being anxious are the most common symptoms reported in individuals with menstrual cramps (77.4 percent) (Talaie *et al.*, 2008). The results of studies by Chow *et al.*, (1998) indicate that the high levels of anxiety have direct relationship with increased menstrual cramps.

With regard to the raised issues, the researcher is seeking to find a scientific answer to this question whether we can reduce the menstrual cramps and migraine by decreasing the level of experienced stress? Is it possible to improve the uncomfortable symptoms of menstrual cramps and migraine by reducing the negative effects of experienced anxiety at physical levels?

MATERIALS AND METHODS

This study has descriptive type and its statistical sample consists of all 25-40 year-old married women with menstrual cramps and migraines in Bushehr City.

Statistical Sample and Sampling Method

The single-stage cluster sampling is the sampling method applied in this research, so that Fatemeh Al-Zahra Hospitalis first selected from the hospitals in Bushehr province and then 122 married women with 25-40 years of age (migraine=56, menstrual cramps=66) are randomly selected by Morgan Table from those referred to this hospital for treating the menstrual cramps and migraine (migraine=65, menstrual cramps=80); and their questionnaires are presented after the specialist physician's confirmation of their migraine and dysmenorrhea.

Research Tools

Visual Analogue Scale (VAS)

The visual analogue scale is a reliable diagnostic method for clinical researchers and it can measure a wide range of clinical pains. This tool consists of a 10-cm ruler which is from zero to one hundred in length. Zero number represents no pain and one hundred shows the unbearable pain. The patients are asked to mark their rates of pain on this ruler, and then the rate of pain is estimated by measuring the distance of patient's mark from the zero point.

Depression, Anxiety and Stress Scale (DASS)

The "Depression, Anxiety and Stress Scale (DASS)" is a 42-item self-assessment tool for measuring the current symptoms during the past week. The DASS includes three subscales of anxiety, stress and depression which are distinct from each other. Each subscale has 14 items which are classified based on a 4-point scale (it is never true for me=0 to 3= It is very true for me).

Implementation Method

The list of relevant physicians is first prepared and then the confirmation and approval by the president of hospital is received for data collection after choosing the eligible patients. For sampling, the questionnaire is given to patients according to the time of their visits and after diagnosis of their illnesses, and then is taken back after filling the questionnaires.

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RESULTS AND DISCUSSION

Results

Data Analysis Method

In this study, the statistical methods at descriptive and inferential levels are utilized to respond to research questions in this study. In descriptive section, the mean, standard deviation, minimum and maximum are utilized for describing the research variables; and the Pearson correlation coefficient and multiple-linear regression are applied for testing the research hypotheses in inferential section.

Findings

The research results are provided in both descriptive and hypothesis findings. Descriptive results include the statistical indices such as the mean, variance, standard deviation, Pearson correlation coefficient and multiple-regression.

The descriptive findings of research scales along with their sub-scales are presented in Table (1).

Table 1: Descriptive findings of research subscales

Statistical index Scale	Mean	Mean error	standard	Standard deviation
Stress	23.37	0.79		8.75
Anxiety	23.18	0.84		9.23
Menstrual cramps	4.07	0.29		2.26
Migraine	4.30	0.43		3.34

The Pearson Correlation is utilized to investigate the correlation between the stress and anxiety with menstrual cramps and migraine. Its results are presented in Table (2).

Table 2: Pearson Correlation Test

Statistical index Variables	Correlation coefficient	R ²	Sig	Significance level
Anxiety	0.69	0.48	0.001	0.05
Menstrual cramps				
Stress	0.78	0.62	0.001	0.05
Menstrual cramps				
Anxiety	0.01	0.0001	0.90	0.05
Migraine cramps				
Stress	0.17	0.03	0.18	0.05
Migraine				

According to the table, there is a significant positive correlation between the anxiety and rate of menstrual cramps ($P < 0.05$). The correlation coefficient is equal to 0.69 between the anxiety and rate of menstrual cramps. The coefficient of determination of this correlation indicates that 48% of variance in menstrual cramps is caused by the anxiety. According to the table, there is a significant positive correlation between the stress and rate of menstrual cramps ($P < 0.05$). The correlation coefficient is equal to 0.78 between the stress and menstrual cramps. The coefficient of determination of this correlation indicates that 62 percent of variance in menstrual cramps is caused by the stress. According to the table, there is a significant correlation between the anxiety and rate of migraine ($P > 0.05$). The correlation coefficient between the anxiety and rate of migraine is equal to 0.01. According to the table, there is no significant correlation between the stress and rate of migraine ($P > 0.05$). The correlation coefficient between the stress and migraine is equal to 0.17.

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The multiple-linear regression is utilized to investigate which one of the dimensions of stress and anxiety can play the most effective role in predicting the migraine and menstrual cramps.

Table 3: Results of regression for stress and anxiety on menstrual cramps

Model	Sum of squares	Degrees of freedom	Mean square	F	R	R ²	R ² _{adj}	sig
Regression	243.49	2	117.24	95.45	0.87	0.76	0.75	0.001
Residual	72.24	58	1.22					
Total	305.73	60						

As shown in Table, the sig value is less than 0.05 indicating the significance of regression model; in other words, at least one of predictive variables has a significant impact on the criterion variable. In this study, the R² value is equal to 0.76 indicating that the stress and anxiety are able to predict 76% of pain and the remaining 24% is associated for the prediction error. R²_{adj} index (adjusted coefficient of determination): The value of this coefficient is equal to 0.75 in this research. In other words, the stress and anxiety components are able to predict 75% of menstrual cramps.

Table 4: Results of regression for stress and anxiety on migraine

Model	Sum of squares	Degrees of freedom	Mean square	F	R	R ²	R ² _{adj}	sig
Regression	28.54	2	14.27	1.28	0.20	0.04	0.009	0.29
Residual	644.44	58	11.11					
Total	672.68	60						

As shown in Table, the sig value is more than 0.05 indicating the insignificance of regression model; in other words, none of the predictive variables have significant impact on the criterion variable (P>0.05). Given the significance of the whole model, we should investigate which one of the coefficients is zero; in other words, which variable(s) have significant effect on the model. T-test is utilized in this regard.

Table 5: Standardized and non-standardized coefficients and t-statistic for variables included in regression equation

Predictive variable	Regression coefficients		t statistics	sig	Significance level
	Non-standardized	Standardized			
Constant value	-0.66		-1.74	0.08	0.05
Anxiety	0.10	0.43	6.16	0.001	0.05
Stress	0.12	0.59	8.54	0.001	0.05

According to the results of table, the anxiety with $\beta = 0.43$ and the stress with $\beta = 0.59$ have significant and positive impact on the menstrual cramps at level of 5% and positivity of these coefficients in fact indicates that an increase of these two factors enhances the rate of pain.

Discussion

Based on the results of regression analysis between the psychological factors with migraine headaches and menstrual cramps, it can be concluded that the psychological factors (stress, anxiety) is a positive stronger predictor of type of menstrual cramps with confidence of 95%, but it does not predict the migraine headaches.

The psychological factors such as the anxiety and stress create a series of physiological-histological and behavioral changes. These changes enable the individual to be adapted to stressful situation. The stressors activate the hypothalamus, pituitary, adrenal and sympathetic systems (Tilbrook *et al.*, 2000). The endogenous analgesic system is one of the systems influenced by stress and anxiety. The stress activates this system and thus relieves the pain (Gamoro *et al.*, 2008; Vendruscolo *et al.*, 2008)

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The results of these hypotheses are consistent with the research by Van-Pelt (1975 b), Davidson (1987), Van-Dych and Pot (1991), Lisspers and Ost (1990), Mizener (1988) and Rasoulzadeh (1998), Moore (1999) and Holroyd (1996) based on the impact of psychological factors on the increased pain.

In a research entitled "The interaction between stress and performance during the menstrual cycle for premenstrual syndrome", Usher and Wilding (1992) have concluded that all experimental subjects have shown the increased irritability and stress in premenstrual phase (PMS), but the special increase is seen in PMS subjects compared to the non-PMS subjects. The PMS subjects have higher scores based on the EPI neural scale than the Non-PMS Subjects and this rate is often the personality type A according to the Framingham ALB personality scale.

Generally, it seems that the patients' anxiety is more caused by the great fear of continued pain during the lifetime. This belief creates a vicious circle which intensifies the pain.

Sadeghi (2004) has investigated the impact of healthy lifestyle education on reducing the symptoms of premenstrual syndrome. The statistical population of this research consists of female students in dormitories of University of Isfahan during the academic year of 2003-4. The results indicate that the healthy lifestyle education reduces the symptoms of premenstrual syndrome such as the depression, anxiety and irritability, but it does not reduce the physical symptoms. Saadati (1993) has investigated the correlation between the attitude towards the menstruation and the prevalence of premenstrual syndrome in nursing and midwifery students at faculty of nursing and midwifery, Tehran University of Medical Sciences. His findings indicate that there is a significant correlation between the prevalence of symptoms and attitudes towards the menstruation, so that the patients with severe PMS have higher negative attitudes towards the menstruation. According to the explanation of these findings, it can be concluded that keeping calm maintains the individual health and protects him against diseases and makes the patient's physical activities normal by realizing the healing forces inside the body. On the other hand, the theoretical and empirical perspectives indicate that the cognitive manifestations are sensitive to the hormone level and cause different reactions in pain cycles, thus the energy is reduced during the menstruation, the stress enhanced, and the negative public psychic modes increased. Therefore, the menstruation should be considered as a state of anxiety and stress during which the physiological and psychological factors act in parallel and then lead to the enhanced negative mood in person. The research limitations are as follows: The married subjects in population reduce the generalizability to singles. The few numbers of subjects can be considered as the factors affecting the findings and as one of the research limitations. According to the research findings, the obstetricians, psychiatrists and psychologists are suggested for remission of menstrual cramp symptoms in patients through controlling their stress and anxiety in long term. The counseling centers of governmental and non-governmental and private organizations are also suggested for increasing the mental health and thus controlling the symptoms of menstrual cramps in women with these diseases by group cognitive-behavioral education. Furthermore, it is suggested conducting this study in another city, province or university as well as comparing the results.

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