The study of predicting role of personality traits in the perception of labor pain

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ABSTRACT

Background: Labor pain is one of the most intense pains experienced by women. Different factors including physiological, psychological, socio-cultural, environmental, and personality-related factors are relevant to perception of childbirth pain. The negative experience of pain causes mental, psychological problems and influences the relationship between the mother and infant. Therefore, considering the importance of women's health, this study was conducted to examine the predicting role of personality traits on perception of labor pain among pregnant women in Kazeroun, Fars Province, Iran.

Materials and Methods: This study is a correlational descriptive–analytical study. The data were collected using big five factors questionnaire about personality traits (neuroticism, openness experience, agreeableness, conscientiousness, and extraversion) and a researcher-made questionnaire on the perception of labor pain (containing items such as reaction to pain, pain intolerance, pain depth, and pain acceptance) from 220 parturient women who referred to Valiasr Hospital in Kazeroun. The data were analyzed using statistical methods including Pearson correlation coefficient, factor analysis, and multiple regression analysis. All analyses were carried out with SPSS.

Results: The results of the study indicated that among the factors influencing the perception of labor pain, the reaction to pain was meaningfully predicted by the personality dimensions of neuroticism (β =0.26, P < 0.01) and openness experience (β =0.20, P < 0.05). Neuroticism (β =0.20, P < 0.05) and openness experience (β =0.20, P < 0.05) were the positive predicting factors and conscientiousness (β = −0.20, P < 0.05) was a negative predicting factor for labor pain intolerance. Agreeableness (β =0.31, P < 0.01), neuroticism (β =0.20, P < 0.01), and openness experience (β =0.18, P < 0.01) were the predictive factors for pain depth. Among all personality traits, neuroticism (β =0.19, P < 0.05) and openness experience (β =0.20, P < 0.05) were the positive predictive factors and conscientiousness (β = −0.24, P < 0.05) was the negative predictive factor for the total score of the perception of labor pain.

Conclusions: It is recognized that personality traits can have predictive roles in the perception of labor pain. As a result, using different methods in managing and reducing childbirth pain, along with good advice and suitable education in pregnancy based on personality traits of women can be helpful for mothers to have more pleasurable experience from childbirth.

Key words: Labor pain, perception of pain, personality traits, pregnant women

INTRODUCTION

Labor pain is one of the most intense pains of women. This type of pain is very common and is an inevitable part of the childbirth process. For some

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reasons, labor pain and its experience is quite different from other types of pains. This pain is not a symptom of tissue injury, and can spontaneously be limited and controlled. This pain gradually gets intense and eventually leads to a desirable event which is the childbirth.[1-3] In general, pain is a multi-dimensional phenomenon and for its precise evaluation, we should consider all aspects affecting it. A closer look at the literature reveals that scholars of pain have classified factors influencing acceptance of pain by patients into three main categories: Biological, socio-cultural, and psychological. Biological factors can dilate or contract the blood vessels by short stress response and consequently have a direct influence on muscle or visceral pain.[4] Among the socio-cultural factors, the role of people in the community and their attitude has an effect on duration and continuity of pain. Pain is a social construction, as different people cannot experience the same pain. Cultural and social differences, such as the recognition of

the disease and its effects, the ability of health care facilities and services, learning how to cope with the pain, tolerance to the physical condition, age, and gender, can act as factors that affect our perception and sensation of pain.[5]

Moreover, psychological and cognitive factors may affect physiological experience and factors that have direct relation on the creation or worsen the primary cause of their pain. Cognitive and emotional interpretations may directly prompt human physiology through increased stimulation of the sympathetic nervous system.[6] A number of scholars believe that the most important factors affecting the perception and acceptance of pain are psychological factors and individual characteristics including the personality traits. If a patient has a definite pattern of thinking and decision, he or she can manage and describe the reaction to pain.[7] For some scholars, pain perception can be considered as the most fundamental aspect of consciousness. Therefore, pain at any level can be a useful motivational stimulus as the person urgently gets to be treated at the beginning of this motivational behavior.[8] It is recognized that pain influences people's quality of life. In this view, study of pain and considering its role in people's mental and physical health is a main factor that has an effect on advanced health and treatment system.[9]

Considering the significance of women's health as the main axis of sustainable development in the developing countries including Iran, and additional tendency to cesarean section, getting far from global norms and a safe delivery,[1] and also due to limited studies conducted in this topic, there are plenty of rationales for studying the predicting role of personality traits on the perception of labor pain in Iran.

MATERIALS AND METHODS

This is a correlational descriptive–analytical study that was conducted on 220 women being referred to Valiasr maternity hospital in Kazeroun, Fars Province, Iran. The inclusion criteria for enrolling the participants were as follows: Having no physical problems throughout pregnancy, having a term pregnancy with single fetus, no mental or psychological illness during or before pregnancy, husband being alive, and no divorce or infertility experience. The sampling method was convenience sampling among women admitted to the hospital for normal delivery during a 3 months period from December 2012 to February 2012. To carry out the study, the five main personality traits questionnaire, developed by Goldberg in 1979, was used to measure the perception of labor pain in women. Goldberg's five main personality traits questionnaire, revised by Khormaei (2006) in the context of Iran, has five main personality traits totally (include neuroticism with 10 items, openness experience with 10 items, conscientiousness

with 9 items, agreeableness with 9 items, and extroversion with 8 items). In our study, the validity of this questionnaire was confirmed using factor analysis based on the principle component method and the rotated component matrix and its reliability was measured with Cronbach's coefficients which gave the following values: Neuroticism (0.88), openness experience (0.78), conscientiousness (0.80), agreeableness (0.80), and extroversion (0.77).[10,11]

Since there are no special criteria for the evaluation of labor pain perception, the researchers devised a scale for the perception of labor pain based on clinical interviews with parturient women and midwives' experience during childbirths and their explanations. This scale has 20 items. To assess the validity of the scale, exploratory factor analysis (EFA) was used to investigate possible underlying factor structures within the range of perceptional measures included in this study. Overall, 20 scale measures were included. Principal axis factoring with varimax rotation was chosen. Factor retention included both Scree plot and Guttmann–Kaiser (Eigenvalues > 1) examination. Degree of alignment of items with factors was evaluated using three more criteria: Minimal factor loadings (>0.30), removal of scales cross-loading on multiple factors, and the requirement of at least three items per factor, following the best practice for EFA. The index of KMO was estimated to be about 0.79. Results of four components, i.e. reaction to labor pain, labor pain intolerance, depth of labor pain, and labor pain acceptance, were achieved. According to the literature and textbook, reaction to labor pain was defined as extreme sensitivity toward the perception of pain intensity and irritability toward labor pain. Labor pain intolerance was defined as showing no resistance toward labor pain and having the perception that labor pain is intolerable. Depth of labor pain was defined as the intense perception of labor pain so that its memory is also shocking and stressful. Labor pain acceptance was defined as believing that labor pain is an unavoidable process which should be accepted and confronted.[12] The reliability of this scale was assessed using Cronbach's coefficient. The coefficient for each of these factors was obtained [reaction to labor pain (0.79), labor pain intolerance (0.51) depth of labor pain (0.65), labor pain acceptance (0.47), and the total labor pain perception (0.79)]. Grading this tool was based on Likert scaling.[4] do this, for positive items, number 5 was given choosing the" quite correct "choice and number 1 was given to a "quite incorrect" choice, and negative items were numbered vice versa. All data were analyzed using SPSS 21. In this phase of the study, main descriptive statistics including mean, standard deviation (SD), and Pearson correlation coefficient, and multiple regression analysis were used for answering the research questions, with the significance of P values being < 0.05.

Ethical approval

This study adhered to standard ethical considerations including obtaining permission to conduct the study from the ethics committee at Kazeroon Azad Islamic University, explaining the study objectives to the participants and subsequently obtaining their written informed consent to participate, ensuring the confidentiality of the data, maintaining participants' anonymity in all study documents, giving them the option to withdraw at any stage during the study, and ensuring their access to the study results.

Results

The findings on the personal information of subjects indicated that the mean of age women was 26 ± 5.26 years. Most participants (40.8%) had finished high school, 66.3% lived in rural areas, it was first pregnancy for 41.7% of the participants and second pregnancy (or more) for 8.3% of the participants, and 83.6% accounted for intentional pregnancies. Mean of each personality trait of the surveyed women of the study indicates that the highest score of personality traits was for agreeableness (M = 4 ± 0.5) and the lowest score was for extroversion (M = 2.94 ± 0.58). Mean value of neuroticism was 3.1 ± 0.68, openness experience was 3.4 ± 0.70, and conscientiousness was 3.7 ± 0.53. The mean of the total score of the labor pain perception and its factors indicates that the highest score was for pain depth (M = 4 ± 0.90) and the lowest score for labor pain acceptance (M = 2.54 ± 0.62). The mean score of labor pain intolerance was 3 ± 0.80 and the mean score of reaction to labor pain was 3.57 ± 0.83.

Table 1 demonstrates the correlation between personality traits and the factors of labor pain perception. It shows that of all personality traits, only agreeableness, neuroticism, and openness experience correlated with labor pain.

Considering the main objective of the study, multiple regression analysis was used. In this analysis, the enter method was applied to enter predictors to the model as shown in Table 2. The results shown in the table indicate that neuroticism (β =0.26, $P < 0.01$) and openness experience (β =0.20, $P < 0.05$) were the positive predictive factors for reaction to labor pain. These variables explain 11% the variation score of the reaction to labor pain.

Also, the results presented in Table 2 show that neuroticism (β =0.20, $P < 0.05$), openness experience (β =0.19 $P < 0.05$), and conscientiousness ($\beta = -0.20$, $P < 0.05$) were the negative predictive factors for labor pain intolerance. These variables account for 10% of the total variation score of labor pain intolerance. The results shown in this table indicate that agreeableness (β =0.31,

Table 1: Correlation between personality traits and the factors of labor pain perception

Variables	Reaction to pain	Pain intolerance	Pain depth	Pain acceptance	Total pain
Extroversion	0.08	−0.009	0.04	0.004	0.10
Agreeableness	0.004	−0.13	0.27**	−0.11	0.01
Conscientiousness	−0.003	−0.13	0.15	−0.03	−0.04
Neuroticism	0.32**	0.29**	0.26**	−0.07	0.36
Openness experience	0.26**	0.16**	0.29**	−0.16*	0.27

**$P<0.01$, *$P<0.05$

$P < 0.01$), neuroticism (β =0.20, $P < 0.01$), and openness experience (β =0.18, $P < 0.01$) were the predictive factors for labor pain depth. These variables account for 16% of the total variation score of labor pain depth.

The results given in Table 2 show that among the personality traits, only the score for openness experience (β =0.19, $P < 0.05$) predicted labor pain acceptance. This variable explains 16% of the total variation of labor pain acceptance.

The results shown in Table 3 indicate that among the personality traits, openness experiences (β =0.19, $P < 0.05$) and neuroticism (β =0.29, $P < 0.05$) were positive predictive factors and conscientiousness (β =0.24, $P < 0.05$) was the negative predictive factor for the perception of total labor pain. These variables explain 16% of the total variation of the labor pain perception in general.

The results given in the table indicate that among the personality traits, openness experiences (β =0.19, $P < 0.05$) and neuroticism (β =0.29, $P < 0.05$) were the positive predictive factors and conscientiousness (β =0.24, $P < 0.05$) was the negative predictive factor for the perception of labor pain. These variables explain 16% of the total variation of the labor pain perception in general.

Discussion

The aim of this study was to find the predictive role of personality traits in the perception of labor pain in parturient women. The results of the study indicated that among the personality traits, neuroticism and openness experience are the positive predictive factors for reaction to labor pain.

The studies carried out by Pearce and Porter, Keritler *et al.,* and Saisto *et al.* also revealed a correlation between neuroticism and depth of labor pain.[13-15] While Miro and Raich, in their study on the relationship between personality traits and the experience of pain, have stated that there is no meaningful relationship between these two variables.[16] As it was mentioned, reaction to labor pain is defined as

Table 2: Multiple regression coefficient, β, of the personality traits as predictor of components of labor pain

Variables	Personality traits	β (standardized coefficient)	P value	CI		Adjusted R²
				Upper	Lower	
Reaction to labor pain	Extroversion	0.05	0.53	0.26	−0.14	0.11
	Agreeableness	0.08	0.40	0.32	−0.13	
	Conscientiousness	0.17	0.10	0.04	−0.43	
	Neuroticism	0.26	0.004	0.35	0.07	
	Openness experience	0.20	0.03	0.30	0.01	
Labor pain intolerance	Extroversion	0.04	0.66	0.14	−0.09	0.10
	Agreeableness	−0.06	0.51	0.085	−0.17	
	Conscientiousness	−0.20	0.04	−0.005	−0.27	
	Neuroticism	0.20	0.02	0.17	0.02	
	Openness experience	0.19	0.03	0.17	0.008	
Depth of labor pain	Extroversion	−0.05	0.54	0.065	−0.12	0.16
	Agreeableness	0.31	0.001	0.29	0.72	
	Conscientiousness	−0.08	0.39	0.06	−0.15	
	Neuroticism	0.20	0.02	0.14	0.015	
	Openness experience	0.18	0.04	0.14	0.002	
Labor pain acceptance	Extroversion	1.05	0.23	0.14	−0.03	0.016
	Agreeableness	1.43	0.33	0.05	−0.15	
	Conscientiousness	1.53	0.63	0.13	−0.08	
	Neuroticism	1.13	0.53	0.08	−0.04	
	Openness experience	1.22	0.04	−0.004	−0.13	

CI: Confidence interval

Table 3: Regression coefficient, β, of the personality traits as predictor of total labor pain

Variables	β (standardized coefficients)	P value	CI		Adjusted R²
			Upper	Lower	
Extroversion	0.10	0.22	0.53	−0.12	0.16
Agreeableness	0.10	0.32	0.58	−0.019	
Conscientiousness	−0.24	0.021	−0.06	−0.82	
Neuroticism	0.29	0.001	0.60	0.15	
Openness experience	0.19	0.04	0.48	0.013	

CI: Confidence interval

extreme sensitivity toward the perception of the intensity of pain and irritability toward pain symptoms. Neuroticism is determined by some features like stress, anxiety, sensitivity, irritability, inconstancy, and intolerance. It is obvious that people having these features are prone to extreme sensitivity toward pain and irritability toward labor pain. Therefore, neuroticism has been a predictive factor for reaction to labor pain. On the other hand, openness experience has also been a predictive factor for reaction to labor pain. Openness to experience is determined by features such as willingness to gain new experiences. Among the features of openness experience, artistic nature, creativity, and imagination can be mentioned. An artistic nature usually concurs with elegance and sensitivity. People with openness experience

are sensitive toward reaction to pain and show more perception. On the other hand, imaginative thoughts lead these people to have greater imagination about labor pain process before confronting labor pain and this issue would increase their sensitivity toward pain and the perception of labor pain.

The results of the study indicate that conscientiousness is the negative predictive factor for labor pain intolerance and neuroticism and openness to experience are the positive predictive factors for labor pain intolerance. The results of the studies carried out by Bru *et al.*, Raselli and Broderick, and Saisto *et al.* showed the relationship between neuroticism and depth of pain.[17-19] Harkins *et al.* believe that none of the personality traits are related to pain.[20]

Labor pain intolerance is defined as showing no resistance toward pain and having the idea that pain is intolerable, but conscientious people are responsible, precise, organized, and resistant. Having these features prepares people to tolerate labor pain and it seems that the negative predictive role of this factor explains the labor pain intolerance. In addition, the features, intolerance of labor pain. The results indicate that agreeableness, neuroticism, and openness experience are positive predictive factors for labor pain depth. Ahadi and Basharpour, in their study

on the relationship between personality dimensions and psychological health, observed that only neuroticism is meaningfully related to pain intensity.[21]

In the earlier studies, it was not reported that agreeableness and openness experience are related to labor pain. But in this study, the relationship between personality traits and labor pain depth was recognized. Pain depth is defined as "an intense and deep perception of labor pain with a stressful and shocking memory." One of the features of agreeable people is sympathy and sensitivity toward pain and suffering. Sometimes these features are obvious in relation to others, but this sensitivity can be focused in the person himself sometimes. In seems that people with these features perceive that pain and experience pain depth internally, and report it in what they say.

It was recognized that neuroticism is determined by features such as anxiety, worries, irritability, and fear. These features and even imagine its memory constantly and go into greater details about pain depth when she is narrating the memories of labor pain. In addition, she experiences greater excitement, irritability, and extreme sensitivity in Remembering labor pain .In addition,openness experienceis accompanied by fantasy and personal sensitivity toward new experiences. These features prepare people to remember imaging more about labor pain depth in their remarks.

The results indicate that among the five main personality traits, only openness to experience is the negative predictive factor for the acceptance of labor pain. By studying pain acceptance and personal control over labor pain, Christains *et al.* started the personal control of pain relief can justify the difference among methods of confronting pain in people.[22] Pain acceptance is defined as having the belief that labor pain is an inevitable process and it should be accepted. As mentioned before, although people with openness to experience are prepared to accept new experiences, accepting new experiences does not mean accepting unpleasant experiences. These people usually look for new experiences which lead to their mental and intellectual improvement, and not painful physical experiences. In addition, artistic sensitivity of these people makes them irritable toward the experience of pain. Hence, features which concur with openness experiences are negative predicative factors for the acceptance of labor pain.

This study provided evidence to prove that neuroticism and openness experience are positive predictive factors and conscientiousness is the negative predictive factor for the total score of the perception of labor pain. Consistent with the results of this study, Van Bussel *et al.,* Ghoushchian

et al., and Denker *et al.* mentioned in their studies that neuroticism, anxiety, and depression are relevant to labor pain intensity.[23-25] In previous works in the literature, it was not recognized that openness experience and conscientiousness are relevant to labor pain, but in this study, there is an evident relationship between these personality traits and labor pain. In the other words, the evidence show always these features of personality are with people in all of life even in pain experience.

CONCLUSION

The findings of this study reveal that some personality traits such as openness experience, neuroticism, and conscientiousness are predictors of the labor pain experience. If women with these features are identified, the necessary measures can be taken to prepare them for the labor pain by providing them with appropriate consultation. Thus, we can manage the labor pain as a strong stressor which can ground great risks for women's reproductive, sexual, mental, and physical health, and reduce its harmful effects. As a result, it seems necessary to establish consultation centers in maternal healthcare centers and educate healthcare personnel to identify the features and act suitably toward labor pain management and childbearing in parturient women.

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