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Prediction of Attitudes towards Cesarean Delivery in Pregnant Women considering Trait Anxiety, Pain Catastrophizing, and Perceived Stress

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Article Info.	Abstract

Abstract

The present study was conducted to predict the attitudes of primiparous pregnant women towards cesarean delivery considering trait anxiety, pain catastrophizing, and perceived stress. The research design was correlational. The statistical population included all primiparous pregnant women who gave birth in Isfahan in 2020-2021 and had a pregnancy record in a comprehensive health service center in Isfahan. By considering the geographical region of the health centers and selecting the sample from all five geographical regions (i.e., North, South, East, West, and Center), it was attempted to include the different cultural and economic backgrounds of the participants. Finally, based on the inclusion and exclusion criteria, the data of 80 pregnant women were analyzed. The instruments included the Attitude toward Delivery Mode (ADM) questionnaire (Ghadimi, et al., 2014), Speilberger State-Trait Anxiety Inventory (STAI; Speilberger, 1983), the Pain Catastrophizing Scale (PCS; Rahmati et al., 2017), and the Perceived Stress Scale (PSS; Cohen et al., 1983). The results of the Kolmogorov-Smirnov Test, Skewness, and kurtosis showed that the data were normal. In addition, the Pearson correlation showed that attitudes to cesarean delivery had a positive relation with all of the three variables (i.e., trait-anxiety, catastrophic pain, and perceived stress); an increase in one variable led to a positive attitude towards cesarean delivery. Moreover, the stepwise multiple regression analysis showed that trait anxiety, catastrophic pain, and perceived stress could predict the attitudes towards cesarean, respectively. In sum, these three variables explained 30% of the variance in the attitudes of primiparous pregnant women towards cesarean delivery. Having provided negative emotional experiences, trait-anxiety along with pain catastrophizing and perceived stress was effective in the positive attitudes of primiparous pregnant women towards cesarean.

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Introduction

The choice of delivery mode affects the health of the fetus and mother. Both methods of vaginal delivery and caesarean delivery have some advantages and disadvantages (Hannah et al., 2004). Different factors affect the preference of delivery mode. One of the factors is anxiety, which is divided into two types of trait anxiety and state anxiety considering if it is transitory or stable (Berggren et al., 2015). Trait anxiety or covert anxiety is a consistent personality trait which refers to a person's consistent tendency to experience stress. It includes anxiety about social evaluation, new situations, and everyday tasks. Trait anxiety provides the basis for the creation of anxious-passive states, which are different from the set of symptoms clinically called anxiety (Costello & Comrey, 1967).

Another reason for tending to cesarean delivery is the chronic concern about pain (Imanparast et al., 2014). Pain catastrophizing is an extreme cognitive and emotional reaction to the actual or expected pain experience (Chaves & Brown, 1987); it is the most important mediator in the relationship between pain experience and emotional dysregulation (Sturgeon et al., 2014). Pain catastrophizing leads to fear and activity avoidance (Leeuw et al., 2007). Another factor affecting the willingness to choose a cesarean delivery is the amount of stress perceived by the mother. Perceived stress is defined as a person's cognitive evaluation of negative life events (Nakamura & Tsong, 2019). Perceived stress intensity expresses a person's belief about the seriousness of the stress (Folkman et al., 1987).

One of the important aspects of this research study was to identify the factors affecting the pregnant women's preference of cesarean delivery to vaginal delivery. Despite the greater risks of cesarean delivery for the mother and child compared to vaginal delivery, statistics have shown an increase in the desire for cesarean delivery in Iran. Identifying the influencing factors in this choice and applying educational and therapeutic methods can provide a healthier choice for pregnant mothers. The current research study mainly asked whether it was possible to predict the tendency to cesarean delivery based on trait anxiety, pain catastrophizing and perceived stress. It is assumed that the higher the amount of these variables in a person is, the more positive his attitude towards cesarean delivery is.

Methodology

The statistical population of the study included pregnant women who gave birth to their first child in Isfahan in 2020-2021, and had a pregnancy record in one of the 30 comprehensive health service centers in Isfahan. With the aim of covering different cultural and economic backgrounds, samples were selected from among two to three centers from North, South, West, East and downtown. After obtaining women's consent to participate in the research study, hard copy questionnaires were administered to them; they filled out the questionnaires in the same meeting and returned them to the researcher. In addition, the participants were selected through purposive sampling method. Considering the minimum number of 50 samples needed for correlation studies (Wilson & Morgan, 2007), in order to increase the test power, after removing incomplete and invalid questionnaires, the data of 80 pregnant women were analyzed. It should be noted that the inclusion criteria were being Iranian, having first delivery, having singleton fetus, being in the age range of 25 to 40, having no specific disease, and having no history of infertility. Furthermore, exclusion criteria were having special illness, being in danger (the mother or the fetus), and asking to withdraw from the research study .

Data were collected through Attitude toward Delivery Mode (ADM) questionnaire (Ghadimi, et al., 2014), Speilberger State–Trait Anxiety Inventory (STAI) (Speilberger, 1983), Pain Catastrophizing Scale (PCS) (Rahmati et al., 2017), and Perceived Stress Scale (PSS) (Cohen et al., 1983). Data analysis was conducted through Pearson correlation method and multiple regression analysis by stepwise method using SPSS software (version 24).

Results

The most frequent age range of women was 25-30 years (43.7%) and the most frequent age range of their spouses was 36-45 years (51.2%). Moreover, 38.8% of women had supplementary insurance, and the preferred delivery mode of 30% of them was vaginal delivery.

Table 1. Descriptive characteristics of the scales

Variables	Mean	Std. Deviation	Minimum score	Maximum score	Cronbach's alpha
Attitudes towards cesarean delivery	39.26	6.59	28	55	.87
Trait anxiety	41.63	13.48	20	73	.87
Perceived stress	21.86	7.58	7	38	.92
Pain catastrophizing	24.75	10.85	2	52	.89

The descriptive characteristics of the scales are provided in Table 1. All scales had adequate Cronbach's alpha. The results of the Kolmogorov-Smirnov test for the two variables of perceived stress and pain catastrophizing (p ≥ 0.05), and the results of the skewness and kurtosis of the two variables of attitude towards cesarean delivery and trait anxiety (being in the range -2 and +2) allowed the use of parametric tests.

The results of Pearson's correlation test showed that the attitude towards cesarean delivery had a positive correlation with trait anxiety (r = 0.384, p = 0.001), pain catastrophizing (r = 0.282, p = 0.011), and perceived stress (r = 0.346, p = 0.002). To predict pregnant women's attitude towards cesarean delivery by predictor variables, multiple regression analysis was used in a step-by-step method. Based on the correlation of the variables with the attitude towards cesarean delivery, trait anxiety (in the first step), trait anxiety and perceived stress (in the second step), and all the three variables (in the third step) were analyzed. The findings showed that F value was significant in all the three steps. The value of the explanation coefficient of the model in the third step (i.e., when all the three variables were included in the analysis) was the highest and equal to 0.299. In other words, 30% of the variance of pregnant women's attitude towards cesarean delivery was explained by trait anxiety, pain catastrophizing and perceived stress (see Table 2).

Table 2. Regression model predicting pregnant women's attitude towards cesarean delivery considering trait anxiety, pain catastrophizing and perceived stress

Steps	Predicting variable	Beta coefficient	Std. error	Std. Beta	t	Sig.
First	Constant	31.443	2.235		14.069	P< .001
	Trait anxiety	.188	.051	.384	3.676	P< .001
Second	Constant	26.801	2.669		10.040	P< .001
	Trait anxiety	.166	.049	.339	3.349	P< .001
	Perceived stress	.255	.088	.293	2.899	P< .005
Third	Constant	23.193	2.892		8.020	P< .001
	Trait anxiety	.156	.048	.319	3.278	P< .002
	Perceived stress	.259	.084	.298	3.061	P< .003
	Pain catastrophizing	.158	.058	.260	2.705	P< .008

Conclusion

The findings showed that predictor variables directly predicted pregnant women's attitude towards cesarean delivery. The relationship between trait anxiety (Orovou et al., 2020), pain catastrophizing (Moasheri et al., 2016) and perceived stress (Sinaei et al., 2018) with the attitude toward cesarean delivery was consistent with the findings of previous research studies. Regarding the finding which indicated that trait anxiety could predict the attitude towards cesarean delivery more than other variables, it is useful to note that trait anxiety is a concept similar to neuroticism, which prepares a person to experience negative emotions and chronic dissatisfaction (Watson et al., 1988). People with high trait anxiety, in addition to emotional vulnerability, engage in excessive attention and focus on negative thoughts, which ultimately lead to the formation of dysfunctional metacognitive beliefs (Carter & Barlow, 1995). This model of anxiety during pregnancy causes the pregnant mother to fear the pain of vaginal delivery; despite the fact that they are aware of the complications of cesarean delivery, they have a positive attitude towards it. Therefore, high trait anxiety itself can lead to more pain catastrophizing as well as a greater amount of perceived stress.

The current study was conducted during Covid-19, and due to the reluctance of pregnant women to stay at the health center for a long time to fill out the questionnaires, the data collection period was prolonged. In addition, sampling was done only in comprehensive health service centers; therefore, it may not have covered individuals with higher socio-economic level who mostly refer to private centers. It is suggested that researchers conduct the study in other cities to investigate the role of cultural and ethnic factors. Based on the findings of the current research, providing information about the delivery mode, reminding the ability of humans to deal with this pain, explaining the cycle of the investigated variables, and teaching methods to reduce anxiety and stress can reduce the willingness of pregnant women to have a cesarean delivery.

Conflict of interest

Acknowledgement

References

Berggren, N., Blonievsky, T. Derakshan, N. (2015). Enhanced visual detection in trait anxiety. *Emotion*, 15(4), 477-483. https://doi.org/10.1037/a0039449.

Carter, M.M., & Barlow, D.H. (1995). Learned alarms: The origins of panic. In W. T. O'Donohue & L. Krasner (Eds.), *Theories of behavior therapy: Exploring behavior change* (pp. 209–228). https://doi.org/10.1037/10169-008.

Chaves, J. F., Brown, J. M. (1987). Spontaneous cognitive strategies for the control of clinical pain and stress. *Journal of Behavioral Medicine*, 10, 263–276. https://doi.org/10.1007/BF00846540

Cohen, S., Kamarak, T., Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior*, 24(4), 385-396. https://psycnet.apa.org/doi/10.2307/2136404

Costello, C., Comrey, A. (1967). Scales for measuring depression and anxiety. *Journal of Psychology*, 66(2), 303-313. https://doi.org/10.1080/00223980.1967.10544910

Folkman, S., Lazarus, R.S., Pimley, S., Novacek, J. (1987). Age differences in stress and coping processes. *Psychology Aging*, 2(2), 171-84. https://doi.org/10.1037//0882-7974.2.2.171

Ghadimi, M.R., Rasouli, M., Motahar, S., Lajevardi, Z., Imani, A., Chobsaz, A., Razeghian, S. (2014). Affecting Factors, the Choice of Delivery and Attitude of Pregnant Women Admitted to the Civil Hospitals, the Social Security Organization in 2013. *Journal of Sabzevar University of Medical Sciences,* 21(2), 310- 319. [In Persian], https://jsums.medsab.ac.ir/article_432.html?lang=en

Hannah, M.E., Whyte, H., Hannah, W.J., Hewson, S., Amankwah, K., Cheng, M., Gafni, A., Guselle, P., Helewa, M., Hodnett, E.D., Hutton, E., Kung, R., McKay, D., Ross, S., Saigal, S., Willan, A. (2004). Maternal outcomes at 2 years after planned cesarean section versus planned vaginal birth for breech presentation at term: The international randomized Term Breech Trial. *Am J Obstet Gynecol,* 191, 917–927. https://doi.org/10.1016/j.ajog.2004.08.004

Imanparast, R., Bermas, H., Danesh, E., Ajoudani, Z. (2014). The effect of cognitive behavior therapy on anxiety reduction of first normal vaginal delivery. *Journal of Shahid Sadoughi University of Medical Sciences and Health Services*, 22(1), 974-980. [In Persian], URL: http://jssu.ssu.ac.ir/article-1-2168-en.html

Leeuw, M., Goossens, M. E., Linton, S. J., Crombez, G., Boersma, K., Vlaeyen, J. W. (2007). The fear-avoidance model of musculoskeletal pain: current state of scientific evidence. *Journal of Behavioral Medicine*, 30, 77–94. https://doi.org/10.1007/s10865-006-9085-0

Moasheri, B.N., Sharifzadehm G., Soltanzadeh, V., Khosravi Givshad, z., Rakhshany Zabol, F. (2016). Relationship between fear of pain, fear of delivery and attitude towards cesarean section with preferred mode of delivery among pregnant women. *The Iranian Journal of Obstetrics, gynecology and Infertility*, 18, 8-16. [In Persian], https://doi.org/10.22038/ijogi.2016.6562

Nakamura, N., & Tsong, Y. (2019). Perceived stress, psychological functioning, and resilience among individuals in same-sex binational relationships. *Psychology of Sexual Orientation and Gender Diversity*, 6(2), 175-181. https://psycnet.apa.org/doi/10.1037/sgd0000318

Orovou, E., Dagla, M., Iatrakis, G., Lykeridou, A., Tzavara, C., Antoniou, E. (2020). Correlation between Kind of Cesarean Section and Posttraumatic Stress Disorder in Greek Women. *International Journal Environmental Research and Public Health*, 17, 1592. https://doi.org/10.3390/ijerph17051592

Rahmati, N., Asghari Moghadam, M., Shairi, M., Paknejad, M., Rahmati, Z., Ghassami, M., Marufi, N., Naeb Aghaee, H. (2017). A Study of the Psychometric Properties of the Pain Catastrophizing Scale Amongst Iranian Patients with Chronic Persistent Pain. *Journal of Ilam University of Medical Sciences,* 25(1), 63-79. [In Persian], https://doi.org/10.29252/sjimu.25.1.63.

Sinaei, A., Abbaspoor, Z., Hashemi, S.E., Javadifar, N. (2018). The Relationship between Perceived Stress and Attitude towards Delivery and Choosing Mode of Delivery among Pregnant Women. *Journal of Babol University of Medical Sciences,* 20(5), 61-67. [In Persian], http://dx.doi.org/10.18869/acadpub.jbums.20.5.68

Speilberger, C.D. (1983). *Manual for the State-Trait Anxiety Inventory: STAI (Form y).* Palo Alto, CA: Consulting Pssy chologist Press.

Sturgeon, J. A., Zautra, A. J., Arewasikporn, A. (2014). A multilevel structural equation modeling analysis of vulnerabilities and resilience resources influencing affective adaption to chronic pain. *Pain*, 155(2), 292-298. https://doi.org/10.1016/j.pain.2013.10.007

Watson, D., Clark, L.A., Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect – the Panas Scales. *J. Pers. Soc. Psychol.* 54, 1063-1070. https://psycnet.apa.org/doi/10.1037/0022-3514.54.6.1063

Wilson Van Voorhis, C.R., L Morgan, B. (2007). Understanding power and rules of thumb for determining sample size. *Methods for Psychology*, 3(2), 43-50. https://doi.org/10.20982/tqmp.03.2.p043