

Factors Influencing Women's Intention to Seek Counseling for Pregnancy-Related Anxiety: An Application of Theory of Planned Behavior

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ARTICLE INFO	ABSTRACT
Article type: Original article	Background & aim: Pregnancy-related anxiety needs to be prevented and managed due to its side effects. Health-promoting behaviors can significantly contribute to the prevention of anxiety during pregnancy. Accordingly, this study aimed to identify factors predicting women's intention to seek counseling for pregnancy-related anxiety using the theory of planned behavior (TPB).
Article History: Received: 22-Jul-2023 Accepted: 19-Jun-2024	Methods: This predictive correlational study was conducted on 200 pregnant women who visited healthcare centers in Sardasht, Northwest Iran during 2019 to 2020. Participants were selected using a stratified random sampling method. Data were collected through a valid and reliable four-part questionnaire which assessed participants' characteristics, knowledge, TPB variables, and anxiety during pregnancy via the Pregnancy-Related Anxiety Questionnaire (PRAQ- R2). The collected data were analyzed using descriptive and analytical tests including Pearson's correlation coefficient and linear regression analysis in SPSS version 23.
Key words: Pregnancy Anxiety Theory of Planned Behavior Women Intention	Results: Data analysis showed that overall, TPB predicted 58.6% of the intention to seek counseling. Also it was found that constructs of TPB including attitude ($\beta=0.15$; $p<0.019$), subjective norms ($\beta=0.31$; $p<0.001$) and perceived behavioral control ($\beta=0.21$; $p<0.047$) had a significant effect on the intention to seek counseling.
	Conclusion: All TPB-related variables were effective in influencing women's intention to seek counseling on pregnancy-related anxiety. These findings provide valuable insights for healthcare providers to design, implement, and evaluate effective interventions aimed at reducing pregnancy anxiety based on TPB.

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Introduction

The prenatal period is a time characterized by fundamental changes in psychological functioning and physiology. During this stage of life, women are exposed to an increased risk of emotional suffering and mental illness (1). Pregnancy-related anxiety refers to anxiety experienced by a pregnant woman that is related to her pregnancy, including concerns about childbirth and the health of the infant (2).

Pregnancy-related anxiety is associated with adverse health outcomes for both the mother and the infant. Specifically, stress and anxiety during pregnancy can lead to negative outcomes including preeclampsia, low birth weight, depression, and increased nausea and vomiting (3). Beyond immediate birth outcomes, maternal pregnancy anxiety is associated with significant long-term sequelae for the child, encompassing a range of behavioral, emotional,

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and cognitive disorders including Attention-Deficit/Hyperactivity Disorder (ADHD), mood disorders, and learning difficulties (4). Women experiencing anxiety during pregnancy may also exhibit symptoms such as excessive worry, stress, difficulty remaining calm, sleep disturbances, and negative thoughts that may disrupt sleep (5). The estimated prevalence rate of pregnancy - related anxiety in Iran is 32.5-54% (6-7).

Pregnant women do not often seek mental healthcare during the perinatal period (8). They also pay little attention to managing their stress or do not use professional mental health services when needed. Nevertheless, low levels of intended help-seeking behaviors have been repeatedly noted (8).

Given the increased mental disorders in the perinatal period, improving counseling-seeking intentions to reduce pregnancy anxiety, irrespective of existing diagnoses and/or current concerns, is essential for implementing early interventions, reducing the risk of developing severe mental health problems, and reducing the burden of illness.

Many health problems stem from human health behaviors (e.g. regular physical activity, healthy nutrition, and necessary vaccination, etc.), and studying theories/ models of behavior help us to understand the underlying factors, and methods for preventing these problems (9). One of these theories is the theory of planned behavior (TPB), which is developed form of the theory of reasoned action (TRA) and describes a healthy behavior over which person has the ability to exert self-control. that is not fully under the control of a person (10).

The TPB is a cognitive theory that offers a good framework for predicting and understanding people's intentions toward health-related behaviors (9). Considering that the attitude of important and trusted people toward pregnant women affects their intention to seek counseling about pregnancy anxiety, this theory is particularly suitable for exploring these attitudes due to its subjective construct. According to the TPB, the intention to engage in a behavior is controlled by the following three concepts: 1) Attitudes (a person's positive or negative evaluation of behavior), 2) Subjective

norms (perceived social pressure for doing or not doing a certain behavior), and 3) Perceived behavioral control (a person's perception of the ease/difficulty of performing a particular behavior (9). This theory proposes that when an individual's attitude and perceptions of social norms toward a specific behavior are congruent, combined with a perceived power of each control factor to facilitate the target behavior, the intention to engage in that behavior increases (11-12). In models like the Theory of Planned Behavior, knowledge is not a core component of the model itself. It is best understood as an external variable that can facilitate or enable the formation of the positive beliefs, attitudes, and perceptions of control that directly drive behavioral intention (11).

Some studies have identified the components of the TPB as predictors of mental health help-seeking intentions as well as behavior (13-15). The literature indicates that there are many factors affecting help-seeking intention including awareness, individual needs, financial ability, and social structural barriers and facilitators (16-18). Understanding the determinants of individuals' counseling-seeking behavior is essential for developing effective health programs and educational strategies that facilitate access to behavioral healthcare services (19, 20).

Given the high prevalence of pregnancy-related anxiety, the low willingness to seek counseling, and the absence of a comprehensive and tested theoretical framework in the Iranian context, the researchers aimed to identify factors predicting women's intention to seek counseling for pregnancy-related anxiety using the TPB. The findings from this study can help healthcare providers in designing, implementing, and evaluating appropriate interventions to reduce pregnancy-related anxiety among women.

Materials and Methods

This predictive correlational study was conducted on 200 pregnant women aged 15-49 years who visited comprehensive health centers in Sardasht, West Azerbaijan province, Northwestern Iran from 2019 to 2020. The sample size was determined based on the recommendation of 15-30 participants per construct (21). Given the six constructs in the

present study and accounting for a 10% attrition rate, a sample size of 200 participants was deemed appropriate. The inclusion criteria were willingness to participate in the study, age between 15 and 49 years, Iranian nationality, residency in Sardasht, no current enrollment in medical sciences, absence of medical or mental illness, not using alcohol, tobacco, or drugs at the time of enrollment, not having used assisted reproductive techniques for pregnancy, no occurrence of stressful events during the past 6 months such as accidents or the death of a loved one, having at least a fifth-grade elementary education, and having pregnancy anxiety based on the Pregnancy-Related Anxiety Questionnaire (PRAQ-R2). The exclusion criteria included the mother's unwillingness to continue cooperation.

The PRAQ-R2 consists of 10 items grouped into three subscales: Fear of childbirth, worries about bearing a physically or mentally handicapped child, and appearance concerns. An extra item, included in the PRAQ-R2 (item 8: "I am anxious about the delivery because I have never experienced one before"), is specific to nulliparous women and is used to differentiate scores between nulliparous and multiparous groups. The items are rated on a 4-point Likert scale, ranging from "definitely true (4)" to "definitely not true" (1), resulting in potential total scores of 10-40 for nulliparous and 9-36 for multiparous women. Higher scores indicate a greater intensity of pregnancy anxiety. The cut-off scores are 26 for nulliparous women and 21 for multiparous women (22). The validity and reliability of the Persian version of this scale were approved by Bayrampour et al. (23).

In Sardasht, four comprehensive health centers provide healthcare to the local population. All comprehensive health centers were considered as sampling locations. The sample was selected using stratified random sampling with proportional allocation. The distribution of participants across the four centers was as follows: Center A: 68 participants (34% of total sample), Center B: 54 participants (27% of total sample), Center C: 46 participants (23% of total sample), Center D: 32 participants (16% of total sample).

After contacting selected women by phone, they were invited to attend the centers to complete self-report questionnaires. Participants were assured that their personal information would be kept confidential. In addition, written informed consent was obtained from each study subject before conducting the study.

The tools consisted of three sections: 1) a demographic and midwifery characteristics form, 2) a knowledge questionnaire, and 3) a questionnaire assessing the direct constructs of the TPB.

The knowledge questionnaire consisted of 14 items, with a score range of 0-14 (1 for a correct answer and 0 for an incorrect answer). The TPB questionnaire contained 51 items divided into four sections including attitude toward counseling-seeking behaviors (9 items, score range: 9 to 45), perceived behavioral control (9 items, score range: 9 to 45), subjective norms (10 items, score range: 10 to 50), and the intention to seek counseling (9 items, score range: 9 to 45). The questions were developed by reviewing the relevant literature and categorized according to a five-point Likert scale (Strongly disagree = 1, Disagree = 2, neither agree nor disagree = 3, Agree = 4, strongly agree = 5). The total score for the behavior intention variable was calculated as the average of all questions related to the behavior intention.

The TPB questionnaire was developed following the recommended guidelines for "Constructing a Theory of Planned Behavior Questionnaire" (24). The research tools were developed by the research team based on a specialized literature review. In the next step, 10 faculty members at Urmia University of Medical Sciences evaluated the content and face validity of the questionnaire. Revisions were made based on their recommendations before finalizing the questionnaire.

The Content Validity Index (CVI) and Content Validity Ratio (CVR) were used to evaluate the content and face validity of data collection tools. The opinions of 10 specialists including three health education and promotion experts, one epidemiologist, and six reproductive health experts were assessed. One item was removed during the face validity assessment. A CVI score

of 0.8 or higher indicates appropriate content validity (25). Items with a CVR of 0.62 or higher were selected according to Lawshe's table (26). The CVI and CVR for all questionnaire dimensions were higher than 0.82 and 0.62, respectively. Internal consistency was assessed using Cronbach's alpha coefficient, confirming the reliability of the knowledge questionnaire ($r=0.68$). The reliability of the TPB questionnaire was evaluated using Cronbach's alpha coefficient and the corresponding values for the attitude, perceived behavior control, subjective norms, and intention subscales were 0.93, 0.92, 0.85, 0.93, and 0.89, respectively.

The collected data were analyzed using descriptive statistics (e.g., frequency, mean, and standard deviation) and inferential statistics (χ^2 tests, Pearson correlation coefficient, and linear regression tests) via SPSS software version 23. A P-value less than 0.05 was considered significant in all statistical analyses. To determine the final and significant predictors of the intention to seek counseling, regression analysis with the backward method was used.

This stepwise regression approach starts with a full (saturated) model, gradually eliminating variables from the regression model at each stage to find a reduced model that best explains the data. This model is especially important in the case of collinearity (when variables in a model are correlated with each other) as it allows the retention of all variables in the model, unlike forward selection, which may exclude correlated variables (27).

Results

The mean age of participants was 29.09 ± 6.76 years. The majority of participants (92.5%) were housewives, and 34.5% had primary education. Most participants (89.5%) reported having sufficient income to meet their needs. Additionally, most participants (57.5%) had a history of more than two pregnancies, and nearly 37% were in the second trimester of pregnancy. The majority of women (77.5%) received prenatal care in comprehensive health centers. Table 1 shows an overview of the participants' characteristics.

Table 1. The Frequency distribution of characteristics of the study sample($n=200$)

Variable	N (%)	Intention Mean \pm SD	P-Value
Level of education			
Elementary	69(34.5)	37.33 \pm 6.82	P=0.49*
Middle school	35(17.5)	36.42 \pm 6.88	
High school diploma	62(31.0)	38.58 \pm 6.96	
University	34(17.0)	37.85 \pm 7.05	
Occupational status			
Employed	15(7.5)	37.26 \pm 7.24	P=0.82**
Housewife	185(92.5)	37.68 \pm 6.90	
Income level			
Insufficient	21(10.5)	35.23 \pm 6.70	P=0.91**
Sufficient	179(89.5)	37.93 \pm 6.89	
Insurance status			
Yes	168(84)	38.11 \pm 6.52	P=0.27**
No	32(16)	35.18 \pm 8.35	
Trimester of pregnancy			
First	54(27)	38.38 \pm 6.33	P=0.36*
Second	75(37)	36.77 \pm 6.80	
Third	71(35)	38.01 \pm 7.41	
Number of pregnancies			
1	85(42.5)	38.41 \pm 6.94	P=0.18**
≥ 2	115(57.5)	37.08 \pm 6.85	
Number of live births			
0	93(46.5)	38.70 \pm 6.86	P=0.04**
≥ 1	107(53.5)	36.72 \pm 6.84	
History of abortion			
Yes	53(26.5)	37.22 \pm 6.27	P=0.60**

Variable	N (%)	Intention Mean± SD	P-Value
No	147(73.5)	37.80±7.13	
History of preterm labor			
Yes	5(2.5)	41.4 ± 8.04	P= 0.22**
No	195(97.5)	37.55±6.87	
History of IUFD			
Yes	9(4.5)	41±5.36	P=0.14**
No	191(95.5)	37.53±6.94	
Incentive resources for prenatal care			
Private centers	8(4)	36.5±7.67	P=0.06*
Healthcare centers	155(77.5)	37.14±6.93	
Private centers +	37(18.5)	40±6.27	

IUFD: Intrauterine fetal death * One way anova, ** T test

Notably, among the characteristics assessed, only the number of living children had a significant relationship with the intention to seek counseling (P=0.04).

Table 2 presents the mean score and standard deviation of knowledge and the constructs in the theoretical framework of the study.

Table 2. Mean and standard deviation of knowledge, attitude, subjective norms, and perceived behavioral control and intention of women toward seeking counseling behavior (N=200)

Variable	Mean+ SD	Maximum	Minimum
Attitude	38.43 ± 7.19	45	13
Subjective norms	43.23 ± 7.41	50	18
Perceived behavioral control	40.82 ± 4.80	45	24
Intention	37.69 ± 6.90	45	13
knowledge	10.67 ± 3.02	14	1

Pearson correlation test was used to determine if the independent variables (attitude, subjective norms, perceived behavioral control, and the demographic and midwifery factors) were correlated with the dependent variable (the intention to seek counseling for pregnancy anxiety). The results

of correlation analysis indicated that the independent variables (constructs of TPB) had a positive and significant correlation with the intention to seek counseling (P<0.01). Table 3 presents additional details about the correlations between dependent and independent variables.

Table 3. Results of correlation matrix between independent variables and dependent variable

Variables	Attitude	Subjective norms	Perceived behavioral control	Knowledge	Age	Number of live births	Intention
r	0.47	0.59	0.45	0.41	-0.079	-0.125	1
P	*0.001	*0.001	*0.001	*0.001	0.268	0.078	

*P < 0.05 is significant; r= Pearson correlation coefficient

The three main assumptions of using regression models including independence, normality, and constancy of residuals respectively confirmed using the Durbin-Watson (test value= 2.1), White (P=0.21), and Shapiro-Wilk (P=0.13) tests. Therefore, linear regression analysis was used. The linear

regression model explained 58.6% of the variance in intention to seek counseling ($R^2 = 0.586$). The overall regression model was statistically significant, $F(4, 195) = 32.04$, $P < .001$. The regression results showed that women's attitudes, subjective norms, and perceived behavioral control were the ultimate predictors of the intention to seek counseling.

These variables explained 58.6% of the variance in the intention to seek counseling. Table 4

displays the results of linear regression analysis concerning the intention to seek counseling.

Table 4. Results of linear regression analysis in prediction of intent to seek counseling (n=200)

Variable	β	SE	t-value	P	R ²
Attitude	0.15	0.06	2.37	*0.019	0.586
Subjective norms	0.31	0.09	3.64	*0.001	
Perceived behavioral control	0.21	0.11	1.99	*0.048	
Knowledge	0.28	0.14	1.95	0.052	

Discussion

This study aimed to identify factors predicting women's intention to seek counseling for pregnancy-related anxiety using the TPB in pregnant women. The findings indicated that all variables of the TPB - attitudes, subjective norms, and perceived behavioral control - predicted the intention to seek counseling.

The subjective norms emerged as the strongest and most influential construct predicting the intention to seek counseling in pregnant women. Silva et al. (2018) showed women are significantly more likely to seek help from informal sources. In other words, women tend to share their emotional problems with friends and family members (28). Fonska et al. (2017) also found that women are significantly more willing to seek help from their partners than healthcare providers (29). This suggests that significant others (friends and family) play a key role for women in seeking counseling for mental health services. To this end, holding training sessions to raise awareness of pregnant women and their family members about mental health issues will play an effective role in increasing their recognition of mental health problems and involvement in further help-seeking behaviors during the perinatal period.

Wang et al. (2021) highlighted that ignoring mental health problems and feeling embarrassed when seeking help may reduce people's desire to seek mental health services (30). According to these results, subjective norms should be incorporated into care and educational programs for pregnant mothers. Effective training programs can create a culture in which women especially pregnant mothers do not feel ashamed of expressing mental health problems. Besides, promoting public awareness can help eliminate the stigma associated with these issues.

Perceived behavioral control was the second TPB construct that explained the intention to seek counseling for pregnancy anxiety in women. Park et al. (2019) argued that low willingness to seek psychological help may stem from cultural incompatibility and public perceptions of mental illness. In Chinese culture, for example, mental illness is often seen as an inability to solve one's problems, personal weaknesses, bad thoughts, or lack of willpower (31). Sabouri et al. (2015) reported that perceived behavioral control had no role in healthcare-seeking behavior (32). Goyal et al. (2020) showed that one-third of the women identified mental health stigma and financial burdens as the major barriers to help-seeking behaviors (33). This discrepancy can be attributed to the fact that the structure of perceived behavioral control depends on the existence or absence of facilitators or barriers to behavior and involves a wide range of potential personal and environmental mediators that may differ in various cultures.

Attitude was the third construct of the TPB that contributed to the intention to seek counseling behavior. The findings of the study by Saburi et al. are in line with those of the present study. The attitude towards the ability to use healthcare had a positive effect on the intention to receive healthcare (32). Recto et al. (2018) showed that negative attitudes toward mental health services are prevalent among pregnant women, often leading to underestimation of mental health services during the perinatal period (34).

The data in the present study revealed that knowledge could not predict the intention to seek counseling. Consistent with this finding, Silva et al. (2018) showed that women's awareness of depressive/anxiety symptoms may turn into feelings of stigma, shame, and

fear, resulting in more reluctance to disclose their symptoms (28). They also reported that limited knowledge about depressive symptoms and treatment options was not a significant barrier to the process of seeking help in women (28). Fonska et al. (2015) indicated that the main identified barrier in women was poor awareness of mental disorders and types of treatment (29). Nonetheless, in this study, knowledge alone did not suffice to prompt the intention to seek counseling, suggesting that factors outside our model warrant investigation.

In the present study, the results of the univariate analysis showed a negative association between the number of children and the intention to seek counseling i.e., women with more children showed lower counseling-seeking levels. It seems that mothers with prior experience of infant care have little childcare experience and may less confident about maternal role (35). Previous childbirth experience may lead women to perceive a lesser need for counseling, as they rely on their prior knowledge, thus reducing their help-seeking behavior..

This study found no statistically significant relationship between demographic variables including education, occupation, and socioeconomic status and the intention to seek counseling for anxiety. However, there was a statistically significant relationship between the number of living children and the intention to seek counseling. The results of the studies by Goyal et al. (2020) and Qureshi et al. (2016) showed that financial problems were the most prevalent barriers to help-seeking in perinatal women (33-35,18). This discrepancy may be attributed to factors such as sample size as well as the socio-economic and cultural factors of the samples.

This study's key strength lies in its rigorous application of the TPB to a novel context, effectively identifying attitudes, subjective norms, and perceived behavioral control as significant predictors of counseling intention among Iranian women. The methodological rigor, demonstrated through a stratified random sample, a well-validated tool, and thorough statistical analyses, strongly supports the validity of these findings. However, the study is limited by its cross-sectional design, which

precludes establishing causality or observing actual help-seeking behavior. Furthermore, the reliance on self-reported data risks social desirability bias, and the findings from a single city in Iran may not be generalizable to other populations. Another limitation was that only women with pregnancy-related anxiety were included in the study. This limits the generalizability of the findings to vulnerable populations (anxious women), rather than the entire population of pregnant women. It is recommended that future research employ longitudinal designs to follow women from pregnancy through the postpartum period. This would allow researchers to track the translation of intentions into actual help-seeking behavior and to observe how these factors evolve over time. Since the study aims to predict intention, the discussion section should also address the limitations of using this design for inferring causal relationships.

Conclusion

Subjective norms and perceived behavioral control were the strongest predictors of the intention to seek counseling. Therefore, the results of this study can have important implications for designing, implementing, and evaluating effective interventions and strategies aimed at addressing pregnancy-related anxiety among pregnant women.

Declarations

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Conflicts of interest

The authors declared no conflicts of interest.

Ethical considerations

Ethical considerations for this study included informing all participants about the research procedures, obtaining written informed consent, and ensuring the confidentiality of participant information.

Code of Ethics

This study was approved by the Medical Ethics Committee of Urmia University of Medical Sciences, Urmia, Iran, with the ethical code IR.UMSU.REC.1399.129.

Use of Artificial Intelligence (AI)

The authors declare that no artificial intelligence (AI) tools or technologies were used in the preparation of this manuscript.

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Authors' contribution

RB, GSH AD contributed to the conception and design of the research. HKH Performed the data analysis and interpretation. RB drafted the manuscript. All authors critically reviewed the manuscript, agreed to be fully accountable for ensuring the integrity and accuracy of the work, and approved the final version for publication.

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