Middle Black Sea Journal of Health Science / Mid Blac Sea J Health Sci **May 2022; 8(2): 286-296**

RESEARCH ARTICLE **DOI:** 10.19127/mbsjohs.1068103

The Relationship Between Women's Birth Beliefs and Their Depression, Anxiety, Stress, and Pregnancy Avoidance

Sumeyye Barut[1](ID), Esra Guney[2](ID), Tuba Ucar[3](ID)

[1]Fırat University, Faculty of Health Sciences, Department of Midwifery, Elazığ, Turkey
[2]İnönü University, Faculty of Health Sciences, Department of Midwifery, Malatya, Turkey
[3]İnönü University, Faculty of Health Sciences Department of Midwifery, Malatya, Turkey

Received:06 February 2022, Accepted: 22 April 2022, Published online: 31 May 2022

Abstract

Objective: This study was conducted to determine the relationship between women's birth beliefs and their depression, anxiety, stress, and pregnancy avoidance.

Methods: This web-based study was conducted in Turkey between September 2021 and October 2021. The study was completed with 619 participants. Personal Information Form, Birth Beliefs Scale (BBS), Depression Anxiety Stress Scale-Short Form (DASS), and Desire to Avoid Pregnancy (DAP) were used to collect the data.

Results: The mean scores of women in the Natural and Medical Process Birth Belief (NPBS/MPBS) were determined as NPBS 4.31±0.68, MPBS 3.65±0.69 respectively. It was determined that there was a weak positive relationship between MPBS and DASS-Depression/Anxiety/Stress, and that this relationship was statistically significant (r=0.107, r=0.081, r=0.100, respectively; $p<0.05$). That the mean MPBS scores of the women who had a low level of education and a high income and were unemployed, and the women using modern family planning methods were statistically higher ($p<0.05$).

Conclusion: In the study, it was determined that there was a positive relationship between depression, anxiety and stress levels of women who considered birth as a medical process, and that women's medical beliefs about birth affected their education and income levels, employment status and the use of modern family planning.

Keywords: Birth beliefs, Depression, Anxiety, Stress, Pregnancy Intention, Pregnancy Preferences, Woman

Suggested Citation: Barut S, Guney E, Ucar T. The Relationship between Women's Birth Beliefs and their Depression, Anxiety, Stress, and Pregnancy Avoidance. Mid Blac Sea Journal of Health Sci, 2022;8(2): 286-296.

Address for correspondence/reprints:
Sumeyye Barut

Telephone number: +09 (538) 618 88 63
E-mail: sbarut@firat.edu.tr

Note: the study was presented as an oral presentation at the "6th ASIA PACIFIC International Modern Sciences Congress"

INTRODUCTION

Although pregnancy and birth are biological and physiological processes, they may arouse the feelings of fear, excitement and happiness in women (1). Women's thoughts about birth are usually clear before pregnancy (2). Sociocultural beliefs, women's obstetric history, perception of birth, fear of birth, psychological state are some of the factors that affect women's birth beliefs. These factors are effective on the health behaviors of the individual (3). Women may consider birth as a medical or natural process (4). "Dysfunctional health beliefs" formed by the society's impact generally consist of beliefs that are idle, rigid, extreme (5). Women have a role in the transfer of health beliefs to the individual, family and society due to their roles as both "wives" and "mothers". Dysfunctional beliefs are used by women in the society in every field and affect women's attitudes towards pregnancy process from generation to generation (6).

The fact that birth is considered to be medical may affect the women's birth preferences and may lead to cesarean. Women's beliefs and attitudes towards a particular mode of delivery are strongly affected by the stories and recommendations they hear from their relatives and friends. For instance, a negative experience from a previous birth may affect a woman's choice of a particular mode of delivery for subsequent births due to the belief that negative experience may occur again (7). If there is a family history of poor obstetric outcomes, the pregnant women may also be anxious. Women turn to an alternative mode of delivery after hearing negative stories about a particular mode that raises concerns that they might have the same experience when they give birth (8). The beliefs about birth may lead to avoidance of vaginal delivery and conception, impaired sexual desire, and the feeling of guilt by causing anxiety and fear. The recommendations from healthcare professionals such as midwives and doctors greatly affect a woman's understanding and choice of a particular mode of delivery (9). Therefore, it is important to determine whether women's birth beliefs are medical or natural and to determine their effects on women's psychology and reproductive health. It is important to know the community served well and to determine the needs and effects on the subject in ensuring the effectiveness of health services. Beliefs create attitudes, and attitudes create behaviors. Therefore, the way to create behavior change in individuals is to determine and correct their beliefs.

No study examining the relationship between birth beliefs and women's psychological state and pregnancy avoidance was found in the literature. Therefore, in our study, it was aimed to determine the relationship between women's birth beliefs and their depression, anxiety, stress, and pregnancy avoidance.

METHODS

This web-based study was conducted in Turkey between September 2021 and October 2021. The data were collected using a web-based online survey through women's groups on social media (Facebook). Online data collection was used because of its many advantages such as convenience, low cost, faster data collection, and comprehensiveness (10). Women who were aged between 15 and 49 years, were sexually active, were not pregnant, could read Turkish and agreed to participate in the study were invited to the study. 848 women participated in the study. The study was completed with 619 participants by excluding

229 women who had missing data and did not meet the inclusion criteria. Before the study, ethical approval was obtained from "XXX" Non-Interventional Research Ethics Committee (Decision No: 2021/2449; Date: 21.09.2021). Voluntary consent was obtained from the participants online before answering the questionnaire forms.

Data Collection Tools

Personal Information Form, Birth Beliefs Scale (BBS), Depression Anxiety Stress Scale-Short Form (DASS), and Desire to Avoid Pregnancy (DAP)were used to collect the data.

Personal Information Form

The Personal Information Form includes a total of 13 questions created by the researchers by reviewing the literature (11). While questions 1-6 were aimed at evaluating the demographic data of women (age, education, employment status, income level, family type, place of living), questions 9-13 were for obstetric data (pregnancy status, miscarriage, giving birth, last mode of delivery, the use of family planning method).

Birth Beliefs Scale

The scale, that evaluates women's basic beliefs about birth, was developed by Preis and Benyamini in 2017 (12). Its Turkish validity and reliability study was conducted by Ahsun (4). The scale has 2 sub-dimensions evaluated as Natural Process Belief Scale (NPBS) (items 1, 2, 4, 6, 9, 10) and Medical Process Belief Scale (MPBS) (items3, 5, 7, 8, 11). The responses to the items are scored from 1 to 5 (1 - strongly disagree - 5 - strongly agree). The scores obtained from the items for each sub-dimension are added and divided by the number of sub-dimension items, and the dimension with a high mean score determines the woman's birth belief. The Cronbach's alpha reliability coefficient of the scale was determined as 0.89 for the NPBS sub-dimension and 0.86 for the MPBS sub-dimension (4). In this study, the Cronbach's alpha reliability coefficient of the scale was determined as 0.82 for the NPBS sub-dimension and 0.86 for the MPBS sub-dimension.

Depression Anxiety Stress Scale-Short Form

It is an assessment tool created by abbreviating the 42-item scale, which was developed by Lovibond and Lovibond to evaluate the depression, anxiety and stress levels of individuals (13). The Turkish validity and reliability study of the scale was conducted by Sarıçam (14). The scale has 3 sub-dimensions in the scale, including depression, anxiety and stress. The scale, which has 7 items to evaluate each sub-dimension, consists of a total of 21 items. The items of the four-point Likert scale are scored between 0 (Never) and 3 (Always). The scores obtained from the subscales are collected within themselves for the scoring of the scale, and high scores indicate an increase in symptoms in the sub-dimension. The Cronbach's alpha internal consistency coefficient of the scale was determined as 0.87 for the depression subscale, 0.85 for the anxiety subscale, and 0.81 for the stress subscale (14). In this study, the Cronbach's alpha internal consistency coefficient of the scale was determined as 0.88 for the depression subscale, 0.81 for the anxiety subscale, and 0.88 for the stress subscale.

Desire to Avoid Pregnancy

It was developed by Rocca et al. in 2019 (15). The Turkish validity and reliability study of the scale was conducted by Karataş Okyay, Güney, and Uçar in 2021 (16). The scale was developed to prospectively

measure the preference range of sexually active women for a possible future pregnancy and aimed to determine women's desire to avoid pregnancy. While the first 5 items of the fourteen-item scale are related to feelings and thoughts about the idea of becoming pregnant in the next 3 months, the remaining items are related to feelings and thoughts about having a baby next year. Items 3, 7, 9, 11, 12, 13, 14 in the scale are reverse scored. The statements of the five-point Likert-type scale are scored as 0 “strongly agree”, 1 “agree”, 2 “undecided”, 3 “disagree”, 4 “strongly disagree” according to their agreement with the items. After the reverse scored items are normalized, all items are summed up and divided by 14 to get a mean score. A high item total score indicates a high desire to avoid pregnancy. The Cronbach's alpha reliability coefficient of the scale was found to be 0.94 (16). In this study, the Cronbach's alpha internal consistency coefficient of the scale was found to be 0.94.

Collection of Research Data

The data of the study were collected using a web-based online survey through women's groups on social media (Facebook). The survey forms developed by using the Google forms application (Google LLC, Mountain View, CA, USA) was delivered to women on social media by sending an online link via an online survey link. Before filling out survey forms, the women were briefly informed about the study online.

Statistical Analysis

The statistical analyses of the data obtained from the study were performed using the SPSS 22.0 (Statistical Packet for the Social Science) program. Numerical data were shown as mean and standard deviation, the nominal data were shown as frequency and percentage. In the evaluation of numerical data, the Kolmogorov-Smirnov test was first used to determine whether the variables met the parametric test conditions. It was determined that the data met the parametric test conditions, the t-test was used for the comparison of two groups, and the One-Way ANOVA Test was used for the comparison of more than two groups. Tukey test, which is a post-hoc test, was used to determine which group caused the difference between groups. The results were evaluated at a significance level of $p<.05$.

RESULTS

The comparison of the mean scores of women of the natural process belief and medical process belief according to some descriptive characteristics is presented in Table 1. It was determined that the difference between the mean scores of the medical process belief and age, family type, place of living, pregnancy status, miscarriage/curettage status, delivery status and last mode of delivery was not statistically significant ($p>0.05$). Nevertheless, it was determined that the difference between education level and the mean scores of the medical process belief was statistically significant, that women considered birth as a medical process as the education level decreased, and that the difference within the group was between those with a university or higher education level and those with a lower than high school education ($p<0.05$, a>c). It was determined that unemployed women considered birth as a medical process compared to employed women and that the difference between the groups was statistically significant ($p<0.05$). It was determined that women with a high level of income considered

Table 1. Comparison of the mean scores of women of the Natural Process Belief and Medical Process Belief according to some descriptive characteristics (n=619)

Variables		Natural Process Belief		Medical Process Belief	
	n(%)	Mean± SD	Test	Mean± SD	Test
Age					
19-29 years	298(48.1)	4.32±0.65		3.64±0.69	
			F=0.828		F=1.091
30-39 years	212(34.2)	4.33±0.72	p=0.438	3.62±0.73	p=0.336
40 years and above	109(17.6)	4.23±0.66		3.73±0.58	
Education status					
High school below[a]	204(33.0)	4.29±0.67		3.73±0.65	
			F=2.021		F=3.481
High School[b]	167(27.0)	4.24±0.73	p=0.133	3.67±0.67	**p=0.031** a>c
University and above[c]	248(40.0)	4.37±0.65		3.56±0.72	
Employment status					
Yes	193(31.2)	4.30±0.74	t=-0.198	3.55±0.74	t=-2.446
No	426(68.8)	4.31±0.65	p=0.843	3.69±0.66	**p=0.015**
Income status					
Low[a]	90(14.5)	4.32±0.59	F=0.343	3.70±0.61	F=3.990
Medium[b]	489(79.0)	4.30±0.70	p=0.710	3.62±0.69	**p=0.019** c>b
High[c]	40(6.5)	4.39±0.56		3.92±0.69	
Family type					
Nuclear family	528(85.3)	4.31±0.68	t=-0.089	3.63±0.69	t=-1.765
Extended family	91(14.7)	4.31±0.69	p=0.929	3.77±0.66	p=0.078
Country Of Residence					
State	412(66.6)	4.31±0.70	t=0.717	3.63±0.71	t=0.476
County	207(33.4)	4.36±0.63	p=0.474	3.67±0.67	p=0.634
The state of undergoing pregnancy					
Yes	517(83.5)	4.31±0.69	t=0.396	3.65±0.69	t=0.255
			p=0.692		p=0.799
No	102(16.5)	4.28±0.64		3.63±0.66	
Miscarriage/curettage status					
Evet	186(30.0)	4.27±0.75	t=-0.817	3.70±0.68	t=1.143
Hayır	433(70.0)	4.32±0.65	p=0.414	3.63±0.69	p=0.254
The state of giving birth					
Yes	495(80.0)	4.32±0.69	t=0.761	3.66±0.70	t=1.090
No	124(20.0)	4.27±0.65	p=0.447	3.59±0.65	p=0.276
The last form of childbirth (n=495)					
Vaginal delivery					
	258(41.7)	4.34±0.63	t=0.739	3.61± 0.64	t=-1.545
Cesarean	237(38.3)	4.29±0.76	p=0.460	3.71± 0.74	p=0.123
Using family planning status					
Those who use;					
The modern method	296(47.8)	4.31±0.66		3.71±0.64	
The traditional method			F=1.189		F=3.736
	166(26.8)	4.36±0.70	p=0.305	3.53±0.76	**p=0.024** a>b
Do not use the method	157(25.4)	4.24±0.70		3.65±0.68	

Modern methods: Oral contraceptive, IUD, condom, tubal ligation, emergency contraception, injection, vasectomy, Traditional methods: Withdrawal, calendar method

Table 2. Distribution of the mean scores of women from the scales (NPBS, MPBS, DASS and DAP)

Scales	Mean± SD	Min-max points that can be obtained from the scale	Min-max scores taken from the scale
NPBS	4.31±0.68	5-25	5-25
MPBS	3.65±0.69	6-30	8-30
DASS - Depression	5.82±3.89	0-21	0-20
DASÖ - Anxiety	5.58±3.50	0-21	0-18
DASÖ - Stress	8.07±3.96	0-21	0-21
DAP	2.16±1.04	0-4	0-4

NPBS: Natural Process Belief Scale, MPBS: Medical Process Belief Scale, DASS: Depression Anxiety Stress Scale, DAP: Desire to Avoid Pregnancy

Table 3. Relationship between women's perception of natural belief and medical belief about birth and depression, anxiety, stress and pregnancy avoidance

	NPBS		MPBS	
Variables	**r**	**p**	**r**	**p**
DASS - Depression	0.013	0.751	0.107	**0.008**
DASÖ - Anxiety	-0.034	0.399	0.081	**0.044**
DASÖ - Stress	-0.005	0.903	0.100	**0.013**
DAP	-0.064	0.109	0.041	0.310

r: Pearson Correlation analysis, NPBS: Natural Process Belief Scale, MPBS: Medical Process Belief Scale, DASS: Depression Anxiety Stress Scale, DAP: Desire to Avoid Pregnancy

birth as a medical process and that the difference within the group was between those with a high level of income and those with a moderate level of income ($p<0.05$, c>b). It was determined that the difference between the use of family planning and the mean scores of the medical process belief was statistically significant, that the women using modern methods considered birth as a medical process, and that the difference within the group was between those using modern methods and those using traditional methods ($p<0.05$, a>b). It was determined that the difference between age, education level, employment status, income level, family type, place of living, pregnancy status, miscarriage/curettage status, delivery status, last mode of delivery, and the use of family planning and the mean scores of the natural process belief was not statistically significant ($p>0.05$).

The distribution of the mean scores of the women participating in the study from the scales is presented in Table 2. Accordingly, the mean scores were found to be NPBS 4.31±0.68, MPBS 3.65±0.69, DASS -Depression5.82±3.89, DASS -Anxiety 5.58±3.50, DASS -Stress 8.07±3.96 and DAP 2.16±1.04, respectively.

The relationship between women's perception of natural belief and medical belief about birth and depression, anxiety, stress and pregnancy avoidance is presented in Table 3. Accordingly, it was determined that the relationship between NPBS and DASS (depression, anxiety, stress) and DAP was not statistically significant ($p>0.05$). It was determined that there was a weak positive relationship between MPBS and DASS -Depression, DASS -Anxiety and DASS -Stress ($r=0.107$, $r=0.081$, $r=0.100$, respectively), and that this relationship was statistically significant ($p<0.05$), however, the relationship between MPBS and DAP was not statistically significant ($p>0.05$).

DISCUSSION

In this study in which women's beliefs about birth were examined, it was determined that women who had a low level of education and a high income and were unemployed and the women using modern family planning methods perceived birth as medical. Accordingly, these women who considered birth as a medical process had beliefs such as the fact that birth is dangerous and risky, it can be considered safe only by looking at past experiences, labor pain is an unnecessary discomfort and needs to be resolved pharmacologically, and it is necessary to give birth under the supervision of a medical professional due to faulty anatomy of the body, and they formed their expectations in this direction. In the literature, there are several study results that support our results or have different results. In their study, Dinç and Karataş Okyay examined the factors affecting the perception

of traumatic birth in women, it was determined that those with low education levels had higher medical beliefs about birth (17). According to the result of the qualitative study conducted by Preis et al. to determine the basic birth beliefs of women, it was determined that women with low education levels obtained higher scores in medical process beliefs (18). These results can be interpreted that the high level of education positively affects the perception of birth.

According to the result of our study, it was determined that women with a high level of income and unemployed women perceived birth as medical. Although it is possible to explain this finding as that woman with high income levels have easier access to health services, it cannot be said to be compatible with the literature. Because high income and working status are often paralleled. Indeed, in a thematic study conducted to evaluate women's birth experiences, it was determined that women with a low level of income and unemployed women wanted to give birth at home and did not prefer the hospital because they had financial difficulties (19). In a cross-sectional study conducted to determine the birth beliefs of women admitted to gynecology clinic and the related factors, women's natural and medical process beliefs were evaluated according to their demographic characteristics, and it was determined that women with a high level of income considered birth as a medical process, which supports the result of our study (2).

According to another result of our study, it was determined that women using modern family planning methods perceived birth as medical. Although there are no studies in the literature evaluating birth beliefs according to the use of family planning, the reason why women using modern methods have high medical birth beliefs may be explained that they consider birth as dangerous and risky and therefore they prefer modern methods with higher protection. In a study in the literature that supports this result, the beliefs of women who gave birth for the first time were evaluated two months after their childbirth, and it was determined that the beliefs of the women in the study that the birth was medical became stronger (18).

According to another result of our study, it was determined that women who considered birth as a natural process had a positive relationship with depression and a negative relationship with anxiety, stress and pregnancy avoidance, however, this relationship was not statistically significant. Accordingly, women who considered birth as a natural process exhibited less pregnancy avoidance behavior. The beliefs about birth in these women represent the expectations that birth should be a normal and safe process, that the female body should be designed for birth, that the woman should trust her body's ability to do it, that pain should be an essential part of childbirth, and that birth should not be intervened except when it is not necessary. It can be considered that women's positive birth experiences contributed to these beliefs. In a study, it was determined that the experience in birth showed that the beliefs were strengthened when the women met their expectations about the birth being satisfactory, natural or medical, and the moderator effect was observed in this regard (18). The World Health Organization (20), stating that increasing the positive experience of mothers at birth is related to reducing

the rates of postpartum depression, has published a global list of recommendations for increasing the positive birth experience. Accordingly, with suggestions such as supporting women during births in the hospital and taking an active role in making decisions about themselves and their birth, stress, anxiety and depression that women will experience will be reduced, their satisfaction with birth will increase, and therefore their belief in considering birth as a natural process will also increase. In a study conducted by Hildingsson, Johansson, Karlström and Fenwick (2013) in Sweden, it was determined that receiving high-quality and individualized maternity care during childbirth was associated with very high birth satisfaction (21). Furthermore, it is indicated in the literature that good care support provided by health personnel is coded as a positive birth experience in women's long-term memory, no matter how complex and difficult the birth process is during childbirth (22). It is thought that women who consider that birth is a natural process will exhibit less pregnancy avoidance behaviors since they believe in the woman's body's ability to do it rather than being a dangerous and risky process.

According to another result of our study, it was determined that women who considered birth as a medical process had a positive and significant relationship with depression, anxiety and stress, however, there was a positive and insignificant relationship with their pregnancy avoidance. When it is considered that women's experience during birth affect their natural or medical beliefs about birth, it can be said that women with negative experiences have negative birth beliefs, which is related to depression, anxiety and stress situations. In the studies, it was determined that low birth satisfaction was associated with an increase in postpartum depression (23, 24), and the risk of experiencing postpartum depression was higher in women who had an interventional delivery (25-27). It is considered that these women will exhibit pregnancy avoidance behavior and will prefer to use effective family planning methods. In the studies, it was revealed that women with a negative birth experience had a decreased desire to have more children, and the desire of these women to give birth by cesarean section increased in their subsequent pregnancies (28, 29).

Limitations of the study

The study has some limitations. One of them is that the study was conducted online. Although online studies have advantages, they also have disadvantages such as carelessness. Another limitation is that the long-term consequences of positive and negative birth experiences on next pregnancy preferences could not be evaluated.

CONCLUSION

In this study conducted to determine the relationship between women's beliefs about birth and their depression, anxiety, stress and pregnancy avoidance, it was determined that there was a positive and significant relationship between medical belief about birth in women and depression, anxiety and stress, and also, women's medical beliefs about birth were affected by education and income level, employment status and the use of modern family planning. When these results are referenced, it can be said that natural birth beliefs about birth will increase with the increase in the education level of women and their participation in business life. Both the result of the study and other reference studies suggest that the

perceptions of birth may change after an objective or subjective birth experience. Therefore, it can be said that midwives play a very important role in increasing women's positive experiences of birth and natural birth beliefs by providing good care to them, thus in whether they want their next pregnancies. Thus, it is very important to support midwives with in-service training so that they can take an active role in this field and manage depression, anxiety and stress well.

Ethics Committee Approval: Ethical approval was obtained from İnönü University Health Sciences Non-Interventional Research Ethics Committee (Decision No: 2021/2449; Date: 21.09.2021).

Author Contributions: Concept and Design: SB, TU Data Collection: SB, EG. Literature search: SB, EG. Analysis or Interpretation, Writing: SB, EG.

Conflict of Interest: No conflict of interest was declared by the authors.

Financial Disclosure: This study was not supported by any funding.

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