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Desire avoid of pregnancy in nulliparous women: The effect of personality and sociodemographic characteristics

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Abstract

The study was aim to determine the effect of personality and sociodemographic characteristics on the avoidance of pregnancy by nulliparous women. The cross-sectional study was conducted through nullipar women's groups on social media platforms (Instagram, Facebook Messenger and WhatsApp etc.). 602 women who volunteered to fill out the questionnaire participated in the study, whose sample consisted of women who had not given birth before, and the study data were collected in November 2022. Data collection forms were created using the Google forms application. Personal Information Form, Ten-Item Personality Inventory (TIPI), and Desire to Avoid Pregnancy (DAP) were used to collect the data. Mean, percentile distribution, standard deviation, t test, one-way ANOVA and simple linear regression analysis were used for statistical analysis. In the study, it was determined that those who were 21 years of age and under, those with a high education level, those who were not working, those who did not think about giving birth, and those who planned a cesarean delivery in the future had higher pregnancy avoidance scores ($p<0.05$). The simple linear regression model showed that age, education level, future pregnancy planning status, planned future birth, openness to experiences and conscientiousness personality traits are important determinants of the desire to avoid pregnancy in women (respectively $\beta=-0.379$; $\beta=0.118$; $\beta=-0.345$; $\beta=0.107$; $\beta=0.202$; $\beta=0.203$; $p<0.001$ for all; $p<0.05$ for birth planned in the future only). Pregnancy avoidance can be seen in nulliparous women who are 21 years of age or younger, have a high level of education, are not working, do not think about giving birth, have a low desire to conceive in the future, plan a future cesarean section, have openness to experiences and conscientiousness personality traits.

Keywords: Avoidance of pregnancy, midwifery, personality traits, women's health

Introduction

Pregnancy and childbirth, changes the status of women in the family and in the society, and because it brings new responsibilities, individuals can enter into a stressful life event that requires social and personal harmony [1]. Although these changes and stressful process do not affect the desire of some women to become pregnant, they may increase the fear of becoming pregnant and thus the desire to avoid pregnancy in others. It is very important

for women who are not planning a pregnancy in the near future or who are planning a pregnancy for the first time to feel ready to become a mother and to plan a pregnancy after that. It has been revealed that the age, educational status, health status, socio-economic status, personality traits and self-concept of the woman are the factors that affect the behavior of motherhood and therefore avoidance of pregnancy [2-4]. In a study, a positive linear relationship was found between maternal age and maternal behavior. It has been reported that higher maternal age can

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provide a more positive maternal behavior for the mother [5]. It is stated that education level is very important in the formation of the interaction between mother-infant attachment, and mothering behavior is more positive in mothers with higher education levels [6,7]. However, it has been revealed that couples with poor socio-economic status avoid pregnancy [8].

Personality, which is considered as all of the cognitive, social, physical and emotional characteristics organized in the literature, constitutes one of the important areas of human psychology. It is stated that personality is also innate, shaped as a result of interaction with the environment in which people live, and is accepted as many features that do not change easily [9,10]. In the classification made based on personality traits, it has been determined that individuals with introverted personality traits have more positive event expectation, have more energy and have a positive effect compared to individuals with extroverted personality traits [11-14]. It has been stated that responsible people are open to experience, have an active imagination, have independent judgment, prefer diversity and tend to have a strong intellectual curiosity. In a study based on personality traits, it was revealed that women with high subjective happiness levels had a higher planned pregnancy rate than women with low subjective happiness levels [15]. Although it is thought that women's desire or unwillingness to conceive may vary according to their personality traits, it is still unclear to what extent women's desire to avoid pregnancy is affected by their personality traits. Therefore, in this study, it has been tried to explain whether personality traits and some sociodemographic characteristics have an effect on women's desire to avoid pregnancy, and if so, to what extent. The research questions identified in this study are given below:

- 1) Do nulliparous women exhibit pregnancy avoidance behavior?
- 2) Do women's personality traits have an effect on their desire to avoid pregnancy?
- 3) Do some sociodemographic characteristics of women have an effect on the desire to avoid pregnancy?

Material and Methods

Research and design

The cross-sectional study was conducted through nulliparous women's groups on social media platforms (Instagram, Facebook Messenger and WhatsApp etc.). 602 women who volunteered to fill out the questionnaire participated in the study, whose sample consisted of women who had not given birth before, and the study data were collected in November 2022. Data collection forms were created using the Google forms application. An informative text about the purpose and content of the study is included on the first page of the questionnaire collection forms. In addition, in the consent form below the text, there is a text stating that the participants who gave their consent would continue the study if they agreed to participate in the study. The nulliparous subjects who approved the research consent form and met the inclusion criteria (married, literate, over 18 years of age, and never gave birth) were included in the study. Those who were single, had

children before, and had a history of miscarriage or curettage were excluded from the study. 632 responses were received from online surveys. Incompletely filled or incorrectly coded questionnaires were identified and 30 participants' questionnaires were excluded and the study was completed with 602 married nulliparous. Women who were parents, who were pregnant, who did not plan to have children in the future, who were diagnosed with any psychiatric diagnosis or infertility at the time of data collection were not included in the study. The research data were collected using the Personal Information Form, Ten-Item Personality Inventory (TIPI), and Desire to Avoid Pregnancy (DAP).

Personal Information Form: There are two parts to the form, which was created based on the results of the literature review made by the researcher. In the first part, there are questions created to determine some sociodemographic characteristics of women (age, income and education level, etc.). In the second part, there are questions created to determine the women's thoughts on pregnancy/birth (labor monitoring status, state of thinking about giving birth, birth planned in the future, desire to become pregnant in the future) [4,15,16].

Ten-Item Personality Inventory (TIPI): The Turkish validity and reliability study of the scale, which was developed by Gosling et al. (2003) to evaluate five different personality traits, was conducted by Atak (2013) [16,17]. The scale items consisting of ten items and 5 sub-dimensions (agreeableness, neuroticism, extraversion, conscientiousness, openness to experiences) were designed in Likert type. In each sub-dimension, there are two statements that are used to measure personality and personality attitudes. The scale does not have a cut-off value (min:2-max:14 scores) [17].

Desire to Avoid Pregnancy (DAP): This scale was developed by Rocca et al. (2019) and adapted into Turkish by Karataş Okyay, Güney, and Uçar (2021). [18,19]. 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 fivepoint Likert-type scale are scored as "0-strongly agree; 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, which was determined to be 0.94 in the original scale [19], was found to be 0.95 in this study.

Statistical Analysis

The Kolmogorov-Smirnov test was used to evaluate whether the data showed normal distribution. In addition, during the

statistical analysis, tests to determine the t test, ANOVA, percentile distribution and mean values were used. IBM SPSS Statistics for Windows, Version 25.0 package program was used during the tests. While determining the variables to be included in the linear regression model, variables that have a significant relationship ($p<.05$) with pregnancy avoidance situations such as age, education status, employment status, thinking of giving birth, desire to become pregnant, and sub-dimensions of the TIPI scale were included in the model. The significance was determined as $p<.05$ when interpreting the analysis results.

Data Collection

Data collection tools were designed in the form of Google form. The form started with a question determining whether the participants were volunteers or not. Personal introduction form was included in the first part of the form, TIPI in the second part, and DAP in the third part. Later, this form was sent to the nulliparous women who agreed to participate in the research via WhatsApp, Facebook Messenger and Instagram. The process of filling out a form took about 10 minutes.

Ethical Considerations

Before the data collection phase, the approval of the Inonu University Health Sciences Non-Interventional Clinical Research Ethics Committee was obtained by the researchers (Decision No: 2022/3840). Before accepting to participate in the study, the "Voluntary Consent Form" is included in the data collection form of the study conducted on the basis of the Helsinki Declaration criteria, and there is an informative text stating that participation in the study is completely voluntary. In addition, in the same text, there is a statement that the information of the participants will be kept confidential and that the answers given will be used only in the relevant study.

Results

602 nulliparous women were included in the study. 62.5% of the women included in the study were 22 years old and over, and the mean age was 25.32 ± 5.93 . It has been determined that 76.2% of the women have a university or higher education, 74.6% are not working, and 60.1% of them have income equal to their expenses. In addition, it was determined that 51.7% of them had/ followed the birth before, 65.4% thought of themselves as giving birth, and 76.7% thought of having a cesarean section in the future (Table 1).

In Table 2, the comparison of the mean scores of the women according to some characteristics from the DAP scale is given. The mean scores of the DAP scale were compared to women aged 21 and under compared to women aged 22 and over; Compared to women with university or higher education, women with high school and below education; in non-working women compared to working women; in women who do not think about giving birth, compared to women who think about giving birth; It was determined that it was higher in women planning a future cesarean delivery compared to women planning a normal

delivery, and the difference between the groups was statistically significant ($p<0.05$).

Table 1. Distribution of socio-demographic characteristics of women (n=602)

Variables	n	%
Age (mean±SD)		25.32±5.93
≤21 years	226	37.5
≥22 years	376	62.5
Education status		
≤High school	143	23.8
≥University	459	76.2
Employment status		
Employed	153	25.4
Unemployed	449	74.6
Income status		
Less than income	178	29.6
Equivalent to income	362	60.1
More than income	62	10.3
Labor monitoring status		
Yes	311	51.7
No	291	48.3
State of thinking about giving birth		
Yes	394	65.4
No	208	34.6
Birth planned in the future		
Vaginal Birth	462	76.7
Cesarean Birth	140	23.3

SD: Standard Deviation

Table 2. Comparing the average scores receive from DAP Scale according to some variables of the women (n=602)

Variables	Mean±SD	Test and p value	
Age (mean±SD)			
≤21 years	2.92±0.83	t=14.183	p<.001
≥22 years	1.83±1.02		
Education status			
≤High school	1.98±1.09	t=-3.332	p=.001
≥University	2.32±1.07		
Employment status			
Employed	2.00±1.07	t=-3.149	p=.002
Unemployed	2.32±1.08		
Income status			
Less than income	2.29±1.02	F=0.265	p=.767
Equivalent to income	2.22±1.11		
More than income	2.20±1.08		
Labor monitoring status			
Yes	2.18±1.08	t=-1.377	p=.169
No	2.30±1.08		
State of thinking about giving birth			
Yes	2.14±1.10	t=-3.093	p=.002
No	2.43±1.03		
Birth planned in the future			
Vaginal Birth	2.17±1.09	t=-2.706	p=.007
Cesarean Birth	2.46±1.02		

DAP: Desire to Avoid Pregnancy, SD: Standard Deviation
t:Independent samples t test, F: One-way ANOVA

When the mean scores of the women from the DAP scale were compared according to their income status and previous birth control status, it was determined that there was no statistically significant difference between the groups ($p>0.05$).

The lowest and highest scores and average scores obtained from the total and sub-dimensions of the scale of the women participating in the study are given in Table 3. In women, the mean score from the TIPI openness to experiences sub-dimension is 8.15 ± 2.46 (range 2-14), the mean score from the conscientiousness sub-dimension is 8.67 ± 2.37 (range 2-14), the mean score from the extraversion sub-dimension is 8.77 ± 1.88 (range 2-14). The mean score from the agreeableness sub-dimension was 9.48 ± 2.43 (range 2-14), and the mean score from the emotional stability sub-dimension was 6.50 ± 2.28 (range 2-14). Additionally, the total mean score of the DAP scale was calculated as 2.24 ± 1.08 (range 0-4) (Table 3).

Table 3. Distribution of TIPI and DAP score averages (n=602)

Scales	Min-max scores from the scale	Mean $\pm$ SD
TIPI sub-dimensions		
Openness to Experiences	2-14	8.15 $\pm$ 2.46
Conscientiousness	2-14	8.67 $\pm$ 2.37
Extraversion	2-14	8.77 $\pm$ 1.88
Agreeableness	2-14	9.48 $\pm$ 2.43
Emotional Stability	2-14	6.50 $\pm$ 2.28
DAP	0-4	2.24 $\pm$ 1.08

TIPI: Ten-Item Personality Inventory, DAP: Desire to Avoid Pregnancy, SD: Standard Deviation

Table 4. Linear regression analysis of mean scores of women from Total DAP and sub-dimensions of TIPI and some variables (n=602)

	β^1 (%95 CI)	SE	β^2	t	p	Zero	Partial	VIF
(Constant)	2.330 (1.463-3.198)	0.442	-	5.275	<.001			
Age (years)	-0.070 (-0.082-0.057)	0.006	-0.379	-10.788	<.001	-0.418	-0.406	1.332
Education status (Ref: High school and below)	0.302 (0.143-0.461)	0.081	0.118	3.727	<.001	0.135	0.152	1.082
Employment status (Ref: Employed)	0.072 (-0.092-0.235)	0.083	0.029	0.864	.388	0.128	0.036	1.196
State of thinking about giving birth (Ref: Yes)	-0.038 (-0.181-0.106)	0.073	-0.016	-0.515	.607	0.125	-0.021	1.103
Desire to become pregnant in the future (Ref: Yes)	-0.112 (-0.132-0.091)	0.010	-0.345	-10.632	<.001	-0.344	-0.401	1.134
Birth planned in the future (Ref: Vaginal Birth)	0.274 (0.114-0.435)	0.082	0.107	3.359	<.001	0.110	0.137	1.085
TIPI sub-dimensions								
Openness to Experiences	0.089 (0.061-0.117)	0.014	0.202	6.230	<.001	0.330	0.248	1.129
Conscientiousness	0.093 (0.064-0.122)	0.015	0.203	6.268	<.001	0.361	0.250	1.127
Extraversion	0.006 (-0.030-0.042)	0.019	0.010	0.325	.746	0.073	0.013	1.105
Agreeableness	-0.023 (-0.051-0.005)	0.014	-0.051	-1.600	.110	-0.042	-0.066	1.101
Emotional Stability	0.010 (-0.020-0.040)	0.015	0.021	0.644	.520	0.173	0.027	1.093

F=44.322; $p<0.001$; Adj. $R^2=0.442$; SE of Estimate= 0.813; Durbin-Watson: 2.043; 1 : Unstandardized Coefficients; 2 : Standardized Coefficients; VIF: Variance Inflation Factor. Ref: reference, TIPI: Ten-Item Personality Inventory, DAP: Desire to Avoid Pregnancy

As a result of the analyzes made, the result of the Linear Regression analysis in the model created with the variables affecting the women's desire to avoid pregnancy is given in Table 4. According to the results of the analysis, it was determined that age, education level, future pregnancy planning, future cesarean delivery planning, openness to experiences and conscientiousness personality traits were important determinants of the desire to avoid pregnancy in women.(respectively $\beta=-.0.379$; $\beta=0.118$; $\beta=-0.345$; $\beta=0.107$; $\beta=0.202$; $\beta=0.203$; $p<0.001$ for all; $p<0.05$ for birth planned in the future only). 44.2% of the desire to avoid pregnancy is explained by the regression model created (Table 4).

Discussion

Although there is some evidence in the literature regarding the avoidance of pregnancy in women who have given birth before, the avoidance of pregnancy experienced by women who have never given birth has not been mentioned yet. This study revealed that some sociodemographic and personality characteristics of nulliparous women have an important determinant effect on pregnancy avoidance. According to the findings of the study, it was determined that nulliparous women who are younger than twenty-two years of age, have a high education level, do not work, do not think about giving birth, and do not plan a pregnancy in the future, and nulliparous women with a planned future pregnancy type cesarean section are more likely to avoid pregnancy. ($p<0.05$; Table 2). Accordingly, being young, having a high education level, not working, not thinking about giving birth, not planning a future pregnancy and planning a future

birth as cesarean section are important determinants of the desire to avoid pregnancy. ($p<0.001$; Table 4). In a study conducted to determine the pregnancy avoidance status of young single women, it was determined that those between the ages of 16-19, those with a university or higher education level, those who are not working and those who do not think about their own birth have higher pregnancy avoidance scores [20]. Considering that having a high level of education affects pregnancy avoidance, it can be said that women in this group prefer effective family planning techniques in order to avoid unplanned pregnancy. In the study conducted to determine contraceptive use and pregnancy preferences in women, it was determined that women who were nulliparous and had a university or higher education had higher pregnancy avoidance scores [21]. In another study conducted to determine the relationship between women's aversion to pregnancy and their use of contraceptives, there was a strong correlation between having a higher pregnancy avoidance score and using an effective contraceptive method [22]. In a similar study, it was determined that young women with high levels of avoidance of pregnancy had stronger preferences for modern contraceptive use [23]. Fear of childbirth can be considered among the reasons why those who do not think about giving birth, who do not plan a pregnancy in the future, or who plan their future birth by cesarean section avoid pregnancy. As a matter of fact, in the literature review, some studies were found to support this finding. In a study evaluating the fear of childbirth and elective cesarean section preferences, it was found that those with severe fear of birth had higher rates of elective cesarean section [24]. In a different study conducted for a similar purpose, it was determined that the biggest psychological variable in the wishes of mothers who voluntarily preferred cesarean delivery was the fear of childbirth [25].

According to the findings of another study, it was determined that women who are open to experience and responsible for their personality traits have higher pregnancy avoidance scores, and having these two personality traits are important determinants of the desire to avoid pregnancy ($p<0.001$; Table 4). People who are open to experience are brave, change-loving, curious, extroverted, independent and open to innovation; It has been revealed that people who have responsibility also have order, self-discipline, act cautiously and have a high sense of duty [26]. In a prospective-longitudinal study conducted to evaluate the effect of personality traits on fear of childbirth, it was determined that having extraverted personality traits is an important determinant in experiencing more fear of childbirth during pregnancy [27]. In a study evaluating the effect of personality traits on planned and unplanned pregnancies, it was determined that unplanned pregnancies were more likely in women with high extraversion, low emotional stability, and low conscientiousness [28].

Strengths and Limitations of the Study

One of the strongest aspects of this study is that it is the first study to evaluate the pregnancy avoidance status of nulliparous

women in Turkey. In addition, the meticulous execution of the analysis process and the explanation of the determinants of the desire to avoid pregnancy at a rate of 45% as a result of the analysis are another strengths. In the study, not evaluating the pregnancy avoidance status of the spouses of nulliparous women, not following the longitudinal results in order to determine the possible pregnancy status and birth preferences of the women who have aversion to pregnancy were determined as some of the limitations of the study.

Conclusion

This study determined some of the important determinants of pregnancy aversion in nulliparous women. Accordingly, it can be suggested that women who are planning pregnancy should receive effective counseling in determining their average age, education level, employment status, planning their own birth, and determining their mode of delivery, and that they be included in training programs. In addition, it can be said that avoidance of pregnancy increases the need for effective use of family planning, and since it is one of the important determining factors in the fear of birth, it can be said that the choice of birth will increase the possibility of using cesarean section. Therefore, it can be recommended to prepare training programs for fear of childbirth and the use of effective family planning techniques and to increase the accessibility of these trainings.

Conflict of interests

The authors declare that there is no conflict of interest in the study.

Financial Disclosure

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Ethical approval

The study was approved by the Inonu University Non-Invasive Clinical Research and Publication Ethics Committee (Decision No: 2022/3840)

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