

The effects of adverse childhood experiences on pregnancy-related anxiety and acceptance of motherhood role

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Abstract

Background: Adverse childhood experiences are a factor that may cause physical illness and deterioration of lifelong well-being in addition to many mental and psychiatric problems in the future. It is important to question and treat them.

Objective: This study examined the effects of adverse childhood experiences on pregnancy-related anxiety and acceptance of motherhood role.

Methods: This cross-sectional study was conducted on 536 pregnant women. The data were collected using the “Personal Information Form”, the “Adverse Childhood Experience Questionnaire (ACEQ)”, the “Acceptance of Motherhood Role (AoMR)” subscale of the “Prenatal Self Evaluation Questionnaire (PSEQ)” and the “Pregnancy-Related Anxiety Questionnaire-Revised 2 (PRAQ-R2)”.

Results: It was found that those with high levels of negative childhood experience had higher levels of anxiety in pregnancy and lower acceptance of maternal role than the other groups ($p < 0.05$). Additionally, a one-unit change in the AoMR score led to a 0.23-unit decrease in the ACEQ score, whereas a one-unit change in the PRAQ-R2 score led to a 0.57-unit increase in the ACEQ score ($p < 0.001$).

Conclusion: Adverse childhood events increase pregnancy-related anxiety and negatively affect acceptance of motherhood role.

Keywords: Adverse childhood events, anxiety, motherhood role, pregnancy.

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Introduction

Adverse life events are considered to be associated with emotional disorders. These include adverse childhood events (ACEs), which are traumatic, distressing, disturbing or overwhelming experiences in childhood. Although studies emphasize physical-sexual abuse, neglect and witnessing domestic violence,¹ other types of ACEs such as loss of parents, parents with mental disorders, divorced parents and family economic distress may be associated with long-term sequelae.^{2,3} Adverse childhood experiences are more common in

underdeveloped and developing countries.^{4,5} In many countries, adverse childhood experiences such as child abuse (sexual, verbal and physical), domestic violence, substance addiction by parents, divorce or mental disorders of parents, imprisonment of a member of the household and poverty are encountered.^{6,7,8} ACEs are a critical public health issue that leads to persistent health issues and needs immediate resolution.⁹ ACEs may cause morbidity and life-threatening diseases such as liver, heart and lung diseases. The more ACEs are experienced, the greater the chance of poor outcomes later in life, including anxiety, mood disorders, cigarette-alcohol use, substance abuse,^{1,2,10,11} attention deficit, social isolation,¹² depression, suicide attempts¹³ and risky sexual behaviors.⁵ Given the persistent effects of ACEs on human health, reproductive health and pregnancy are inevitably affected in a negative way by these experiences.^{11,14,15}

ACEs increase the risk of preterm labor by causing behavioral risk factors such as smoking, alcohol and

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substance abuse, sexually transmitted infections, malnutrition and obesity.³ Given that the risk of spontaneous preterm labor is between 9% and 10%, having two or more ACEs in one's childhood increases the risk of preterm delivery to 20% regardless of the pregnant woman's age, smoking habits, educational status or abortion history.¹⁵ Additionally, prospective and retrospective studies show that adults who have been the victims of continuous abuse or neglect in childhood have poorer mental and physical health than adults who have not been ill-treated in childhood.¹⁶⁻¹⁸ These mental health issues include severe mood disorders, behavioral health issues, personality disorders and post-traumatic stress disorders.¹⁹ Anxiety is associated with depression and stress, as well as adverse pregnancy outcomes including preterm labor, asymmetric fetal growth and low birth weight.^{15,20} Moreover, the weaker defense systems of women who have adverse childhood experiences²¹ are seen as a strong risk factor in development of depressive symptoms during pregnancy.²² Therefore, the effects of ACEs on psychosocial health in pregnancy should be evaluated and emphasized.⁴

In the literature, it is emphasized that parenthood may be a difficult task for individuals with ACEs.²³ For example, one study reported that parents with ACEs would like to receive guidance and assistance from healthcare professionals for their parenting roles.¹³ Studies emphasized that parenting may be a difficult task for individuals with ACEs.²³ Several studies reported a relationship between allostatic load (long-term stress exposure) and poor parenting. This may be because adverse early childhood events have a critical role in cognitive and social development.^{12,24} Additionally, another study showed that sensitive maternity care had a strong protective effect in alleviating the effects of ACEs on health.²⁴ However, not all parents with ACEs may reflect their negative experiences to their children. Nevertheless, by evaluating all possible risks, expectant mothers should have screening for ACEs and establish a balanced communication with relevant healthcare professionals as early as possible.^{4,12} In prenatal observations that are made, psychological factors such as concerns about the health of the pregnant woman herself or her baby, fear of childbirth and anxieties about the acceptance of the role of motherhood should be associated with adverse childhood experiences.²⁵⁻²⁷ The number of studies that have discussed adverse childhood experiences in pregnancy is limited.²⁶⁻²⁸ In this respect, this study aimed to examine the effects of adverse childhood experiences

on pregnancy-related anxiety and acceptance of the role of motherhood.

Methods

This is a cross-sectional study conducted to determine the effects of adverse childhood experiences on pregnancy-related anxiety and acceptance of the role of motherhood.

Setting and samples

The study was conducted between June and September 2019 at the gynecology and obstetrics outpatient polyclinics of a public hospital in the eastern part of Turkey. The population of the study consisted of pregnant women who visited the gynecology and obstetrics outpatient polyclinics of the institution for the purpose of monitoring their pregnancy. The sample consisted of 536 pregnant women who agreed to participate in the study and met the criteria for inclusion. They were selected using the random sampling method. The data were collected by the researcher using the face-to-face interview method on weekdays. The interviews lasted 10 minutes on average.

Criteria of inclusion for pregnant women:

- Having no communication problem,
- Being in the age range of 18-35,
- No diagnosis of risky pregnancy (preeclampsia, diabetes, placenta previa, twin pregnancy, etc.) and mental health disorders (prior mood disorder, etc.). The presence of problems in pregnant women was determined based on the woman's declaration and medical history.
- Voluntary participation in the study.

Data Collection Tools

The data were collected using the Personal Information Form, the Adverse Childhood Experience Questionnaire (ACEQ), the Acceptance of Motherhood Role (AoMR) subscale of the Prenatal Self Evaluation Questionnaire (PSEQ) and the Pregnancy-Related Anxiety Questionnaire-Revised 2 (PRAQ-R2).

Personal Information Form

The personal information form, developed by the researcher, consisted of a total of 11 items, including ten questions about pregnant women's sociodemographic characteristics (age, marital status, living place, education level, employment status, social security, economic status and family type) and one question about their obstetric characteristics (number of pregnancies).

Adverse Childhood Experience Questionnaire (ACEQ) ACEQ was developed by Felitti et al. (1998), and its Turkish validity and reliability study was conducted by Gündüz et al. (2018). It consists of 10 items about childhood traumas. The Turkish form of the scale consist of a single factor. There is only the 'yes' option for the questions, and otherwise, they are left blank. The ACEQ total score ranges between 0 and 10. There is no cutoff value. In this study, the researcher determined a cutoff value. The Cronbach's alpha reliability coefficient was found to be 0.74 for the original scale.^{29,30} The coefficient was found to be 0.70 for this study.

Prenatal Self Evaluation Questionnaire (PSEQ) - Acceptance of Motherhood Role (AoMR)

This scale was developed by Lederman (1979)³¹ to evaluate a pregnant woman's adaptation to pregnancy and motherhood role, and its Turkish validity and reliability study was conducted by Beydağ and Mete³¹. PSEQ is a 4-point Likert-type scale with 79 items and 7 subscales that evaluate adaptation to pregnancy. This study used the subscale of acceptance of motherhood role with 15 items, in which the total score ranges from 15 to 60. The Cronbach's alpha reliability coefficient was found to be 0.76 for the original scale.³¹ The coefficient was found to be 0.81 for this study.

Pregnancy-Related Anxiety Questionnaire-Revised 2 (PRAQ-R2)

The scale was developed by Van den Bergh (1990) and revised by Huizink et al. (2016). The Turkish validity and reliability study of the scale was conducted by Aksoy Derya et al. (2018) to assess the anxiety levels of women in pregnancy. The Turkish form of the scale consists of 10 items for multiparous women and 11 items for primiparous women. It has 3 subscales: "fear of giving birth" (items 1, 2, 6 and 8), "worries of bearing a physically or mentally handicapped child" (items 4, 9, 10 and 11) and "concerns about own appearance" (items 3, 5 and 7). The 8th item in the scale (I am anxious about the delivery, because I have never experienced one before) is used for women who have

not experienced labor before. This is a 5-point Likert type scale. The items are scored between 1 and 5 (1-Absolutely not relevant and 5-Very relevant), and the highest and lowest possible scores are respectively 11 and 55 for primiparous women and 10 and 50 for multiparous women. A higher score indicates a higher level of pregnancy-related anxiety. All expressions on the scale are positive. There is no cutoff value. The Cronbach's alpha reliability coefficient was found to be between 0.81 and 0.94 for the original scale and subscales.³² The coefficients were found to be between 0.71 and 0.92 for this study.

Ethical considerations

For conducting the study, an approval was obtained from the Health Non-Interventional Clinical Research Publication Ethics Committee of Inonu University (Decision No: 2019/282). Before starting the research, the pregnant women were informed about the research, stating that their personal information would be protected, and participation in the study was based on volunteerism.

Data analysis

The data were coded and analyzed using the SPSS 16.0 package program (SPSS Inc, Chicago, IL). The data were evaluated using percentage distribution, arithmetic mean, standard deviation, one-way ANOVA, Pearson correlation, multiple linear regression analysis and ROC analysis. Statistical significance was accepted as $p < 0.05$.

Results

Table 1 shows the distribution of the pregnant women's sociodemographic and obstetric characteristics. The mean age of pregnant women was 27.95 ± 4.44 , and 35.8% of them were high school graduates, 82.8% were unemployed, 70.9% had medium-level income, and 60.4% lived in the city. Additionally, 70.5% were multiparous, and 90.7% were in their third trimester. It may be stated that the representative power of the results of this study is higher in terms of multiparous women and women in their 3rd trimester of pregnancy.

Table 1. Distribution of pregnant women's sociodemographic and obstetric characteristics (n=536)

| Variable | ±SD | |
|--------------------------------|------------|------------|
| Age (Mean±SD) | 27.95±4.44 | |
| | n | % |
| Education | | |
| Literate/Primary school | 72 | 14.3 |
| Secondary school | 120 | 22 |
| High school | 194 | 35.8 |
| University | 150 | 27.6 |
| Perceived income level | | |
| Low | 112 | 20.9 |
| Middle | 380 | 70.9 |
| High | 44 | 8.2 |
| Living place | | |
| City | 324 | 60.4 |
| County | 128 | 23.9 |
| Village | 84 | 15.7 |
| Employment status | | |
| Employed | 446 | 82.8 |
| Unemployed | 90 | 16.8 |
| Gravida | | |
| Primigravida | 158 | 29.5 |
| Multigravida | 378 | 70.5 |
| Trimester | | |
| I. Trimester and II. Trimester | 48 | 9.3 |
| III. Trimester | 488 | 90.7 |
| Total | 536 | 100 |

Table 2 shows the frequency and percentage distribution of the pregnant women who said yes to ACEQ's

items. It was determined that 27.14% of the pregnant women had not lived any Adverse Childhood Experience, while 72% of them had lived at least one.

Table 2. Number and Percentage Distribution of Participants Saying Yes to ACEQ's Items

| Items | n | % |
|--|------------|------------|
| 1. Did a parent or other adult in the household often. Swear at you, insult you, put you down, or humiliate you? or Act in a way that made you afraid that you might be physically hurt? | 113 | 42.2 |
| 2. Did a parent or other adult in the household often. Push, grab, slap, or throw something at you? or Ever hit you so hard that you had marks or were injured? | 96 | 35.8 |
| 3. Did an adult or person at least 5 years older than you ever. Touch or fondle you or have you touch their body in a sexual way? or Try to or actually have oral, anal, or vaginal sex with you? | 17 | 6.3 |
| 4. Did you often feel that. No one in your family loved you or thought you were important or special? or Your family didn't look out for each other, feel close to each other, or support each other? | 57 | 21.3 |
| 5. Did you often feel that. You didn't have enough to eat, had to wear dirty clothes, and had no one to protect you? or Your parents were too drunk or high to take care of you or take you to the doctor if you needed it? | 14 | 5.2 |
| 1. 6. Were your parents ever separated or divorced? | 27 | 10.1 |
| 7. Was your mother or stepmother: Often pushed, grabbed, slapped, or had something thrown at her? or Sometimes or often kicked, bitten, hit with a fist, or hit with something hard? or Ever repeatedly hit over at least a few minutes or threatened with a gun or knife? | 39 | 14.1 |
| 2. 8. Did you live with anyone who was a problem drinker or alcoholic or who used street drugs? | 9 | 3.4 |
| 3. 9. Was a household member depressed or mentally ill or did a household member attempt suicide? | 20 | 7.5 |
| 4. 10. Did a household member go to prison? | 16 | 6 |
| Number of pregnant women not living any Adverse Childhood Experience | 128 | 27.14 |
| Total | 536 | 100 |

Table 3 shows the calculation of the cutoff point of ACEQ. As a result of the ROC analysis, the highest sensitivity and lowest specificity values were determined

at the cutoff point of 3.5 points. At this point, the sensitivity and specificity of the scale were found to be 1.000 and 0.004, respectively (Table 3; Figure 1).

Table 3. Calculating ACEQ's Cutting Score

| Total Score Scale | Cutting Score | Sensitivity | Specificity | P | Area Under The Curve | Confidence Interval | |
|-------------------|---------------|-------------|-------------|--------|----------------------|---------------------|-------------|
| | | | | | | Lower Limit | Upper Limit |
| | 3.5 | 1.000 | 0.004 | 0.001* | 0.986 | 0.849 | 0.918 |

*p<0.05

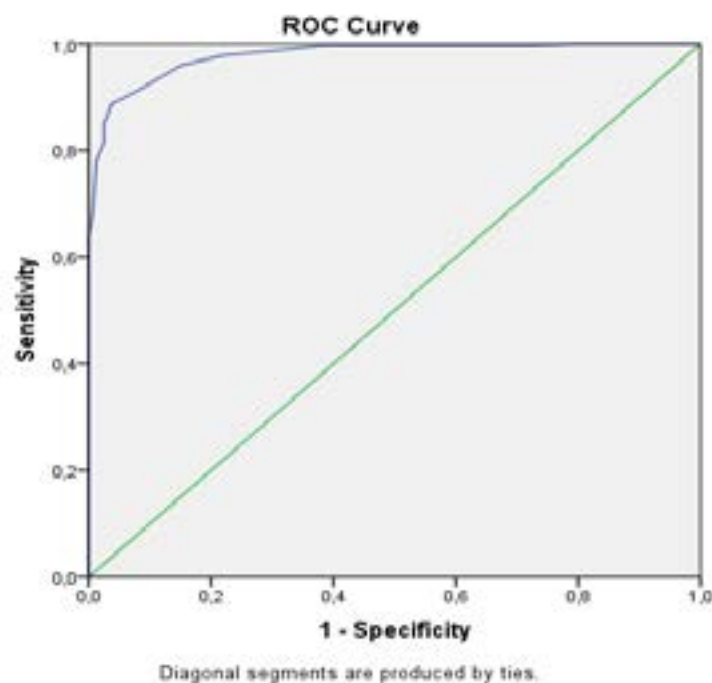
**Figure 1:** Determination of ACE cut-off point according to ROC Analysis

Table 4 shows the ACEQ classification according to the cutoff score. It was determined that 39.9% of the participants had no negative childhood experience, 50.7% had low scores, and 9.4% had high scores (Table 4). Additionally, the mean score of the pregnant women was 1.8 ± 1.55 on ACEQ.

Table 4. ACEQ Classification by Cut off Score

| Groups | Number (n) | Percent (%) | ±sd |
|--------|------------|-------------|-----------|
| No | 214 | 39.9 | - |
| Low | 272 | 50.7 | 2.16±0.80 |
| High | 50 | 9.4 | 4.52±1.04 |

Table 5 presents the comparison of the mean scores of acceptance of motherhood role and pregnancy-related anxiety according to the ACEQ classification. It was determined that there was a statistically significant relationship between ACEQ and acceptance of mater-

nal role and the mean scores of pregnancy-related anxiety ($p < 0.05$). It was found that those with high levels of negative childhood experiences had higher levels of anxiety in pregnancy and lower acceptance of maternal role than the other groups (Table 5).

Table 5. Comparison of AoMR and PRAQ-R2 Mean Scores According to ACEQ Classification

| ACEQ Classification | AoMR | | | PRAQ-R2 | | |
|---------------------|------------------|------------|--------|-------------------|------------|--------|
| | \pm sd | Test value | p | \pm sd | Test value | p |
| No | 48.39 \pm 6.23 | | | 29.177 \pm 5.99 | | |
| Low | 46.89 \pm 7.44 | F=15.584 | 0.001* | 31.77 \pm 6.30 | F=40.326 | 0.002* |
| High | 42.32 \pm 7.18 | | | 33.02 \pm 5.82 | | |

* $p < 0.05$, F= ANOVA analysis

Table 6 shows the relationship between the pregnant women's mean scores on the ACEQ, AoMR and PRAQ-R2 total scale and subscales. There was a statistically significant weak positive relationship between the pregnant women's mean scores on ACEQ, PRAQ-R2 and PRAQ-R2 subscales including "fear of giving birth", "worries of bearing a physically or men-

tally handicapped child" and "concerns about own appearance" ($p < 0.05$). Additionally, there was a statistically significant weak negative relationship between the pregnant women's mean scores on ACEQ and PSEQ-AoMR ($p < 0.05$). Adverse childhood experiences increased pregnancy-related anxiety and adversely affected acceptance of motherhood role (Table 6).

Table 6. The relationship between pregnant women's mean scores on ACEQ, AoMR and PRAQ-R2 total scale and subscales (n=536)

| Variable | ACEQ | |
|---|-------|-------|
| | r | P |
| AoMR | -.227 | .027* |
| PRAQ-R2 | | |
| Fear of giving birth | .194 | .049* |
| Worries of bearing a physically or mentally handicapped child | .242 | .013* |
| Concerns about own appearance | .206 | .036* |
| PRAQ-R2 Total | .297 | .002* |

* $p < 0.05$

A “multiple linear regression analysis” was conducted to explain the effects of AoMR and PRAQ-R2 on ACEQ (Table 7). As a result of the analysis, it was determined

that a 1-unit change in AoMR led to a 0.23-unit change in the ACEQ score in the negative direction. Moreover, a 1-unit change in PRAQ-R2 led to a 0.57-unit change in the ACEQ score in the positive direction ($p < 0.001$).

Table 7. Multiple Linear Regression Analysis Results for Scales

| Variables | R ² | F | p | Coefficients | t test | β | Linearity Statistics | |
|---|----------------|--------|--------|--------------|--------|--------|----------------------|--------|
| | | | | | p | | Tolerance | VIF |
| AoMR | | | | -0.050 | 0.001* | -0.231 | 0.998 | 1.002 |
| PRAQ-R2 Total | | | | 0.142 | 0.001* | 0.578 | 0.248 | 4.039 |
| Fear of giving birth | | | | 0.059 | 0.395 | -0.371 | 0.007 | 17.668 |
| Worries of bearing a physically or mentally handicapped child | 0.207 | 18.170 | 0.001* | -0.083 | 0.068 | -0.157 | 0.404 | 2.473 |
| Concerns about own appearance | | | | -0.069 | 0.221 | -0.098 | 0.470 | 2.125 |
| Constant (β ₀) | | | | 0.795 | 0.262 | - | - | - |

* $p < 0.05$

Discussion

The results of this study, which was conducted to examine the effect of adverse childhood experiences on pregnancy-related anxiety and acceptance of motherhood role, are discussed in the light of the relevant literature. Although there are several studies on the relationship between adverse childhood experiences and pregnancy outcomes,^{11,14,20} there is a limited number of studies on the relationship between adverse childhood events, pregnancy-related anxiety and acceptance of motherhood role. In this respect, our study is considered to be significant.

It was found that 60.1% of the pregnant women who participated in the study had at least one adverse childhood experience in the first 18 years of their life, and the mean score that they obtained from ACEQ was 1.8 ± 1.55 . Additionally, it was determined that 39.9% of the participants had no negative childhood experiences. In the study conducted by Anda et al., 63.6% of the participants had at least one ACE, and 36% had no adverse childhood experiences. In this study, it was determined that 39.9% of the participants had no negative childhood experiences, 50.7% had low scores, and 9.4%

had high scores (Table 4). The findings were consistent with the literature.^{21,33}

Studies have reported that adverse childhood experiences affect a person’s whole life, including pregnancy and childbirth.^{11,14,21} Additionally, it is emphasized that ACEs may affect life-long psychosocial health.^{23,26,34} In this study, it was seen that the participants who had high levels of negative childhood experience had higher anxiety levels than the other participants (Table 5; Table 6; Table 7). Another study also similarly determined that pregnant women with ACEs showed high levels of depressive symptoms.²² One of the most common negative emotions during pregnancy is anxiety.³⁵ Adverse childhood experiences increase pregnancy-related anxiety, causing negative behaviors in pregnant women such as smoking and alcohol use and threatening maternal and fetal health.²¹ Studies have determined that women with ACEs have a higher tendency towards behaviors such as cigarette and alcohol usage in their pregnancy.^{21,28,35} Inadequate social support systems (mother, friend, etc.), domestic violence, alcohol abuse of a family member are considered adverse childhood experi-

ences, affecting prenatal anxiety.^{36,37} In this respect, the results of this study were consistent with those in the literature, suggesting that adverse childhood experiences increase pregnancy-related anxiety.

Approximately 6-10% of pregnant women experience severe fear of childbirth.^{33,38} Pregnant women may have fear of childbirth for many reasons such as concern of having an unhealthy baby, worries of being unable to bear labor pain,³³ lack of knowledge and previous experiences.³⁹ Mudra et al. (2019) found that pregnant women with inadequate perceived social support, low level of education and poor self-efficacy experienced higher levels of fear of childbirth.⁴⁰ Considering that people with adverse childhood experiences have behavioral problems such as low self-esteem, social isolation and discontinuation of education,^{4,12} these problems may also challenge pregnant women in coping with fear of childbirth. The finding in this study that fear of childbirth was higher in those with adverse childhood experiences supported this opinion of ours.

Having a child is a unique experience for family members.⁴¹ However, the possibility of having a handicapped child is one of the most feared thoughts pregnant women have.³³ This study found that adverse childhood experiences increased the fear of having a handicapped child. Some studies stated that negative emotions raise concerns about the child's health.^{42,43} In this respect, negative feelings experienced in the past may increase concerns about fetal health and development. Additionally, this study also found that adverse childhood experiences increased concerns about own appearance in pregnant women (Table 6). Physical changes in pregnancy may cause body image perception problems in women. Pregnancy-related physical changes are uncomfortable for some women, whereas they may be neutral for other women.⁴⁴ This study found that adverse childhood experiences were uncomfortable factors that may deface physical appearance in pregnancy. Similar to those in a limited number of studies suggesting that adverse childhood events raise concerns about own appearance in pregnant women,^{45,46} the results of this study were consistent with those in the literature.

Women's ability to fulfill parenting behaviors depends on their perceived maternal role competence.⁴⁶ The role of motherhood begins in pregnancy, continues in the postpartum period and develops over time.⁴⁷ This study found that the pregnant women had a moderate level

of acceptance of the role of motherhood, and there was a negative relationship between adverse childhood experiences and acceptance of motherhood role (Table 6; Table 7). Additionally, it was determined that the acceptance of the role of motherhood was higher in those without adverse childhood experiences (Table 5). One study where the relationship between ACEs and commitment was examined was encountered. In the study, it was determined that women with ACEs avoided commitment, and commitment anxiety was high among these women.³⁸ The number of studies on this topic is limited. However, as acceptance of the role of motherhood is associated with age at marriage and first-time motherhood, social support systems, perceived income level and self-esteem,⁴⁶ adverse childhood experiences may also affect the acceptance of motherhood role.

Limitations

As in any study, there were some limitations in this study. These limitations included having conducted a cross-sectional study, only in a certain province at a public hospital's obstetrics and gynecology outpatient clinic, and with the use of pregnant women and measurement tools that were limited. Additionally, the higher ratios of multiparous women and women in their 3rd trimester may be considered as a limitation in terms of representative power.

Conclusion

In the study conducted to determine the effects of adverse childhood experiences on pregnancy-related anxiety and acceptance of motherhood role, adverse childhood experiences were found to increase pregnancy-related anxiety and negatively affect acceptance of the role of motherhood. It was found that, as the mean score of adverse childhood experiences increased in the pregnant women, anxiety related to pregnancy increased, whereas acceptance of motherhood role decreased.

The results of the study may be quite useful to the practices of midwifery-nursing. According to the results obtained, it was revealed that healthcare professionals should question adverse childhood experiences during antenatal evaluations by establishing a reassuring relationship with pregnant women. For this purpose, it is needed to use interpersonal communication skills, keep situations that may be hidden such as sexual abuse in mind and show a professional approach without being judgmental. Thus, it may be possible to assess the impact of adverse childhood experiences on pregnancy-related anxiety and acceptance of the role of moth-

erhood. Questioning adverse childhood experiences during the pre-conceptional period may help women experience healthier pregnancy outcomes.

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Conflict of interest

The authors declare that there is no conflict of interest.

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References

1. Mersky JP, Topitzes J, Reynolds AJ. Impacts of adverse childhood experiences on health, mental health, and substance use in early adulthood: A cohort study of an urban, minority sample in the U.S. *Child Abuse & Neglect*. 2013; 37(11):917–925. doi:10.1016/j.chiabu.2013.07.011
2. Danese A, Moffitt TE, Harrington H, Milne BJ, Polanczyk G, Pariante CM, Caspi A. Adverse childhood experiences and adult risk factors for age-related disease: depression, inflammation, and clustering of metabolic risk markers. *Archives of Pediatrics & Adolescent Medicine*. 2009; 163(12):1135-1143.
3. Dragan. MA. Adverse experiences, emotional regulation difficulties and psychopathology in a sample of young women: Model of associations and results of cluster and discriminant function analysis. *European Journal of Trauma & Dissociation*. 2020;4(1):1-7 <https://doi.org/10.1016/j.ejtd.2018.12.001>.
4. Hambrick EP, Brawner TW, Perry BD, Brandt K, Hofmeister C, Collins J. Beyond the ACE score: Examining relationships between timing of developmental adversity, relational health and developmental outcomes in children. *Archives of Psychiatric Nursing*. 2018; .doi:10.1016/j.apnu.2018.11.001
5. Kidman R, Smith D, Piccolo LR, Kohler HP. Psychometric evaluation of the Adverse Childhood Experience International Questionnaire (ACE-IQ) in Malawian adolescents. *Child Abuse & Neglect*. 2019; 92:139-145.
6. Strine TW, Edwards VJ, Dube SR, Wagenfeld M, Dhingra S, Prehn AW. et al. The mediating sex-specific effect of psychological distress on the relationship between adverse childhood experiences and current smoking among adults. *Substance Abuse Treatment, Prevention, and Policy*. 2012; 7(30). <https://doi.org/10.1186/1747-597X-7-30>
7. Bellis MA, Hughes K, Leckenby N, Hardcastle KA, Perkins C, Lowey H. Measuring mortality and the burden of adult disease associated with adverse childhood experiences in England: a national survey. *Journal of Public Health* (Oxford, England). 2015; 37(3): 445–454. <https://doi.org/10.1093/pubmed/fdu065>
8. Manyema M, Richter LM. Adverse childhood experiences: prevalence and associated factors among South African young adults. *Heliyon*. 2019; 5(12), e03003. <https://doi.org/10.1016/j.heliyon.2019.e03003>
9. Wosu AC, Gelaye B, Williams MA. Maternal history of childhood sexual abuse and preterm birth: an epidemiologic review. *BMC Pregnancy And Childbirth*. 2015; 15(1):174.
10. Berens AE, Jensen SK, Nelson CA. Biological embedding of childhood adversity: from physiological mechanisms to clinical implications. *BMC Medicine*. 2017; 15(1):135.
11. Appleton AA, Kiley K, Holdsworth EA, Schell LM. Social Support during Pregnancy Modifies the Association between Maternal Adverse Childhood Experiences and Infant Birth Size. *Maternal and Child Health Journal*. 2019; 23(3):408-415.
12. Howell BR, Sanchez MM. Understanding behavioral effects of early life stress using the reactive scope and allostatic load models. *Development and Psychopathology*. 2011; 23(04):1001–1016.doi:10.1017/s0954579411000460
13. Conn A. M., Szilagyi, M. A., Jee, S. H., Manly, J. T., Briggs, R., & Szilagyi, P. G. Parental perspectives of screening for adverse childhood experiences in pediatric primary care. *Families, Systems, & Health*. 2018;36(1):62.
14. Christiaens I, Hegadoren K, Olson DM. Adverse childhood experiences are associated with spontaneous preterm birth: a case–control study. *BMC Medicine*. 2015; 13(1):124.
15. Wajid A, Van Zanten SV, Mughal MK, Biringer A, Austin MP, Vermeyden L, Kingston D. Adversity in childhood and depression in pregnancy. *Archives Of Women's Mental Health*. 2019; 1-12.
16. Gilbert R, Widom CS, Browne K, Fergusson D, Webb E, Janson S. Burden and consequences of child maltreatment in high-income countries. *Lancet*. 2009; 373(9657):68-81.
17. Wegman HL, Stetler CA. Meta-analytic review of the effects of childhood abuse on medical outcomes in adulthood. *Psychosomatic Medicine*. 2009; 71:805–812.
18. Irish L, Kobayashi I, Delahanty DL. Long-term physical health consequences of childhood sexual abuse: a meta-analytic review. *Journal of Pediatric Psychology*. 2010;35:450–461.

19. Jaffee SR, Takizawa R, Arseneault L. Buffering effects of safe, supportive, and nurturing relationships among women with childhood histories of maltreatment. *Psychological Medicine*. 2017; 47(15):2628-39.
20. Kelly-Irving M, Lepage B, Dedieu D, Bartley M, Blane D, Grosclaude P, Delpierre C. Adverse childhood experiences and premature all-cause mortality. *European Journal Of Epidemiology*. 2013; 28(9):721-734.
21. Bhengu BS, Tomita A., Mashaphu S, Paruk S. The role of adverse childhood experiences on perinatal substance use behaviour in KwaZulu-Natal Province, South Africa. *AIDS and Behavior*. 2019; 1-10.
22. Ångerud K, Annerbäck EM, Tydén T, Boddeti S, Kristiansson P. Adverse childhood experiences and depressive symptomatology among pregnant women. *Acta Obstetrica Et Gynecologica Scandinavica*. 2018; 97(6):701–708. doi:10.1111/aogs.13327
23. Adem, Güneş. Leave and Relax, (pp:24-25). 2nd ed. İstanbul: Timaş Publishing, 2019.
24. Connell CM, Prinz RJ. The impact of childcare and parent–child interactions on school readiness and social skills development for low-income African American children. *Journal of School Psychology*. 2002; 40(2):177-193.
25. Martini J, Asselmann E, Einsle F, Strehle J, Wittchen H.U. A prospective-longitudinal study on the association of anxiety disorders prior to pregnancy and pregnancy- and child-related fears. *Journal of Anxiety Disorders*. 2016; 40:58–66. doi:10.1016/j.janxdis.2016.04.007
26. Young-Wolff KC, Alabaster A, McCaw B, Stoller N, Watson C, Sterling S. by et al. Adverse Childhood Experiences and Mental and Behavioral Health Conditions During Pregnancy: The Role of Resilience. *Journal Of Women's Health*. 2019; 28(4):452–461. <https://doi.org/10.1089/jwh.2018.7108>.
27. Ben Salah A, Lemieux A, Mlouki I, Amor I, Bouanene I, Ben Salem K. by et al. Impact of social violence and childhood adversities on pregnancy outcomes: a longitudinal study in Tunisia. *Journal Of Global Health*. 2019; 9(2), 020435. <https://doi.org/10.7189/jogh.09.020435>.
28. Currie CL, Sanders JL, Swanepoel LM, Davies CM. Maternal adverse childhood experiences are associated with binge drinking during pregnancy in a dose-dependent pattern: findings from the All Our Families cohort. *Child Abuse & Neglect*. 2020; 101: 104348.
29. Felitti VJ, Anda RF, Nordenberg D, Williamson DF, Spitz AM, Edwards V, Marks JS. Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: The Adverse Childhood Experiences (ACE) Study. *American Journal Of Preventive Medicine*. 1998; 14(4):245-258.
30. Gündüz A, Yaşar AB, Gündoğmuş I, Savran, C, Konuk, E. Adverse Childhood Events Turkish Form: validity and reliability study. *Anatolian Journal Of Psychiatry/ Anadolu Psikiyatri Dergisi*. 2018; 19(1):68-75.
31. Beydağ KT, Mete S. Validity and Reliability Study of the Prenatal Self Evaluation Questionnaire. *Anadolu Hemşirelik ve Sağlık Bilimleri Dergisi*. 2008; 11(1):16-24
32. Derya YA, Taşhan ST, Duman M, Ozan YD. Turkish adaptation of the pregnancy-related anxiety questionnaire-revised 2: Validity and reliability study in multiparous and primiparous pregnancy. *Midwifery*. 2018; 62:61-68.
33. Junge C, Von Soest T, Weidner K, Seidler A, Eberhard Gran, M, Garthus Niegel S. Labor pain in women with and without severe fear of childbirth: a population based, longitudinal study. *Birth*. 2018; 45(4):469-477.
34. Leeners B, Rath, W, Block E, Görres G, Tschudin S. Risk factors for unfavorable pregnancy outcome in women with adverse childhood experiences. *Journal of Perinatal Medicine*. 2014;42(2):171-178.
35. Bernazzani O, Bifulco A. Motherhood as a vulnerability factor in major depression: the role of negative pregnancy experiences. *Social Science & Medicine*. 2003; 56(6):1249-1260.
36. Frankenberger DJ, Clements-Nolle K, Yang W. The association between adverse childhood experiences and alcohol use during pregnancy in a representative sample of adult women. *Women's Health Issues*. 2015; 25(6):688-695.
37. Racine N, Plamondon A, Madigan S, McDonald S, Tough S. Maternal adverse childhood experiences and infant development. *Pediatrics*. 2018; 141(4), e20172495.
38. Haines HM, Rubertsson C, Pallant JF, Hildingsson I. The influence of women's fear, attitudes and beliefs of childbirth on mode and experience of birth. *BMC Pregnancy And Childbirth*. 2012; 12(1):55.
39. Serçekuş P, Okumuş H. Fears associated with childbirth among nulliparous women in Turkey. *Midwifery*. 2009;25(2):155-162.
40. Mudra S, Göbel A, Barkmann C, Goletzke J, Hecher K, Schulte-Markwort M, Arck P. The longitudinal course of pregnancy-related anxiety in parous and nulliparous women and its association with symptoms of social and generalized anxiety. *Journal Of Affective Disorders*. 2020; 260:111-118.
41. Xiang Y, Chi X, Wu H, Zeng T, Chao X, Zhang P, Mo L. The trauma of birth or parenting a child: effect on parents' negative emotion in China. *Archives Of Psychiatric Nursing*. 2017;31(2):211-216.
42. Arch JJ. Pregnancy-specific anxiety: which women are highest and what are the alcohol-related risks?. *Comprehensive Psychiatry*. 2013; 54(3):217-228.

43. Blackmore, ER, Gustafsson H, Gilchrist M, Wyman C, O'Connor TG. Pregnancy-related anxiety: evidence of distinct clinical significance from a prospective longitudinal study. *Journal of Affective Disorders* 2016; 197:251-258.
44. Henriques A, Alves L, Alves E, Silva S, Barros H, Azevedo A. Social trajectory and body image satisfaction in childbearing women. *Maternal And Child Health Journal*. 2015; 19(6):1237-1244.
45. Krieger NA. Glossary for social epidemiology. *Journal of Epidemiology and Community Health*. 2001; 55(10):693–700.
46. Shrooti S, Mangala S, Nirmala, P, Devkumari S, Dharanidhar B. Perceived maternal role competence among the mothers attending immunization clinics of Dharan, Nepal. *International Journal Of Community Based Nursing And Midwifery*. 2016; 4(2): 100.
47. Kordi M, Fasanghari M, Asgharipour N, Esmaily H. The effect of maternal role training program on role attainment and maternal role satisfaction in nulliparous women with unplanned pregnancy. *J Educ Health Promot*. 2017;9(6):61. doi: 10.4103/jehp.jehp_113_15.
48. Akco S, Dagli T, Inanici M. A, Kaynak H, Oral R, Sahin F, Ulukol B. Child abuse and neglect in Turkey: professional, governmental and non-governmental achievements in improving the national child protection system. *Paediatrics And International Child Health*. 2013;33(4):301-309.