

The Effect of Adverse Childhood Experiences on Coping With Premenstrual Syndrome and Sexual Myths

Arzu Aydoğan¹ , Fadime Bayri Bingöl² ,
Elif Yildirim² , Hilal Maşalacı² , İrem Nur Uzun²
and Zalihe Yarkiner³

Abstract

Adverse childhood experiences (ACEs), including abuse, neglect, and household dysfunction, are known to shape long-term psychological and emotional outcomes. However, their impact on women's reproductive health, especially in how they manage premenstrual symptoms, remains underexplored. In sociocultural contexts where sexuality is regulated by restrictive and patriarchal norms, the internalization of sexual myths may further mediate the effects of early trauma on adult well-being. This study examines the relationship between ACEs and women's strategies for coping with premenstrual symptoms, focusing on the mediating role of sexual myths as internalized belief systems that may reflect the long-term consequences of interpersonal trauma. A total of 640 women aged 18 to 36 living in Turkey participated in this cross-sectional study conducted online between March and November 2024. Participants completed validated Turkish versions of the ACEs Questionnaire, the Sexual Myths Scale, and the Premenstrual

¹Yüksek İhtisas University, Ankara, Turkey

²Marmara University, Maltepe, Istanbul, Turkey

³International Cyprus University, Nicosia, Cyprus

Corresponding Author:

Arzu Aydoğan, Faculty of Health Sciences, Department of Nursing, Psychiatric Nursing,
Yüksek İhtisas University, Ankara 06520, Turkey.

Email: aaydogan80@gmail.com

Coping Measure. Women with higher ACE scores reported significantly lower use of communicative coping strategies and a greater endorsement of sexual myths. Mediation analyses revealed that belief in sexual myths significantly mediated the relationship between ACEs and both emotional awareness/acceptance and self-care in managing premenstrual symptoms. Socioeconomic hardship and growing up in large families were also associated with stronger endorsement of sexual myths. These findings suggest that internalized sexual myths may serve as a psychosocial pathway through which early trauma continues to shape women's embodied and emotional experiences in adulthood. Trauma-informed and feminist-informed interventions are essential for addressing the lingering effects of childhood violence and promoting healthier coping strategies in reproductive health.

Keywords

adverse childhood experiences, premenstrual syndrome, sexual myths, coping, trauma, women

Introduction

Adverse childhood experiences (ACEs) represent significant early-life stressors that can disrupt psychological, emotional, and physiological development. These experiences, ranging from abuse and neglect to household dysfunction, have been linked to a wide spectrum of long-term mental and physical health consequences, including depression, anxiety, and difficulties in emotional regulation (Petrucelli et al., 2019; World Health Organization [WHO], 2020). ACE can disrupt early brain development and jeopardize the functioning of the nervous and immune systems, and intense stress can lead to serious problems such as alcoholism, depression, eating disorders, unsafe sex, HIV/AIDS, heart disease, cancer, and other chronic diseases (WHO, 2020).

Although it is quite difficult to access data on violence against children in Turkey, UNICEF's 2022 Turkey child research report published by the Turkish Statistical Institute draws attention to the fact that 54.1% of the disciplinary methods applied to children between the ages of 1 and 17 are disciplinary methods involving psychological or physical violence (UNICEF, 2022). In its 2024 press release, UNICEF stated that there are over 370 million girls and women in the world who have been raped or sexually assaulted as children (UNICEF, 2024).

In the Turkish context, disciplinary practices and family structures are often shaped by traditional norms emphasizing obedience and family honor,

which may influence the prevalence and forms of ACEs. Compared to Western societies where emotional expression is more openly encouraged, Turkish culture may normalize certain disciplinary behaviors or emotional suppression, potentially affecting how individuals experience and report childhood adversity. This cultural framework should be considered when interpreting ACE data and its long-term psychological outcomes.

These striking figures regarding ACEs in the world and in our country naturally lead researchers to investigate the current lives of adult individuals with ACEs. Today, we know that all kinds of positive and negative experiences in the early stages of life can affect individuals physically and mentally (McKay et al. 2021; Paslı 2020; Petrucci et al. 2019; Struck et al, 2021). While the physical and psychological effects of ACEs are well established, less is known about their impact on specific domains of women's reproductive and emotional health, particularly in relation to premenstrual symptoms and culturally embedded beliefs about sexuality.

Premenstrual syndrome (PMS), a recurring set of physical and psychological symptoms experienced during the menstrual cycle, has been increasingly understood as influenced not only by hormonal shifts but also by psychosocial and cultural factors (Özkan & Koç, 2020). Childhood traumas that women face in the first years of their lives have an important place among the psychosocial factors that predispose to psychopathology (Rosada et al., 2023). Psychological symptoms such as irritability, depressive mood, anxiety, crying, tension, concentration disorders, and forgetfulness are considered among the basic components of PMS (Çoban & Karlı, 2023). PMS may also be related to gender roles attributed by society, social attitudes toward women with PMS, and even violence. Accordingly, if there are widespread beliefs in a society that women are "strange and dangerous" due to the psychological and behavioral symptoms caused by PMS, social attitudes may restrict their social, political, and professional development, trigger a tendency to keep them in traditional gender roles, and cause violence, especially in heterosexual relationships (Özkan & Koç, 2020). In societies where emotional expression is stigmatized or femininity is pathologized, PMS can be further complicated by social expectations and gender-based norms.

From a psychosocial perspective, beliefs about sexuality may intersect with perceptions of menstruation and PMS. For instance, myths suggesting that "women are irrational or overly emotional during menstruation" or that "sexual activity during menstruation is harmful" can reinforce stigma and negative attitudes toward women's emotional expression (Kukulu et al., 2009; Oğur et al., 2016; Torun et al., 2011). Such myths may exacerbate shame and self-blame in women experiencing PMS, influencing both their symptom perception and coping behaviors.

Women's perceptions of sexuality and PMS experiences can thus be shaped by cultural and social myths. According to the Turkish Language Institution, "myth" means a concept or person that has become legendary, a folk tale with an allegorical narrative that spreads traditionally or changes its form under the influence of the imagination of the society. "Sexual myths" are beliefs and thoughts about sexuality that affect the attitudes and behaviors of individuals, are exaggerated, thought to be true, have no scientific value, are often passed from ear to ear, and become extraordinary as they are passed on (Kukulu et al., 2009; Oğur et al., 2016; Torun et al., 2011). Sexual myths embedded in society can have a profound impact on how women perceive their own bodies and health, their emotional experiences, and their perceptions of their own lives, and can have negative effects on the management of PMS. Although sexual myths are widespread in our country, studies have shown that many individuals, especially at a young age and shaped according to the society they live in, have high levels of belief in sexual myths despite their lack of sexual experience (Karaçam Yılmaz et al., 2024; Gül & Şimşek Çetinkaya, 2024). In cultures where sexuality is treated as taboo, such beliefs may be internalized more deeply by women with trauma histories, particularly when open discussion about sexual health is absent.

This study aimed to examine the effects of women's ACEs on their coping styles with premenstrual syndrome and their beliefs in sexual myths and to determine whether sexual myths mediate the relationship between ACEs and coping with premenstrual symptoms. In this context, the findings are expected to provide guidance for supportive intervention strategies that health professionals, particularly psychiatric nurses, can offer to women under their care. Focusing on the intersection of early trauma, cultural norms and emotional coping, this research seeks to illuminate how women's health behaviors are shaped by both personal and social narratives. By focusing on how ACEs may continue to shape adult women's emotional and reproductive health, the study also highlights the enduring psychological patterns that link early trauma to later coping and belief systems. Understanding these complex dynamics is especially critical for designing nursing and psychiatric interventions that are both culturally competent and gender-sensitive.

Research Questions

1. Do ACEs have an effect on PMS?
2. Do ACEs have an effect on sexual myths?
3. Are sexual myths a mediator in the relationship between ACE and PMS?

Methods

Aim

This study aimed to examine the effects of women's ACEs on their coping styles with premenstrual syndrome and their beliefs in sexual myths, and to determine whether sexual myths mediate the relationship between ACEs and coping with premenstrual symptoms.

Sample Design and Setting

This descriptive study was carried out between March 1 and November 1, 2024 using an online questionnaire created on Google Forms and distributed via WhatsApp.

Participants and Inclusion/Exclusion Criteria

A priori power analysis was conducted using G*Power 3.1 (Faul et al., 2009), a statistical power analysis software developed at Heinrich Heine University Düsseldorf, Germany, to determine the required sample size. Based on previous research, we anticipated an effect size of $f=0.175$ (between small and medium) for our primary analyses. With $\alpha=.05$ and power of 0.80, the analysis indicated a minimum required sample size of 406 participants for detecting differences between four income groups using one-way analysis of variance (ANOVA). For family structure comparisons using independent t -tests, 620 participants were required to detect small effects ($d=0.20$) with the same parameters. The final sample of 640 participants exceeded these requirements, providing sufficient power to detect small effects ($r=.10$) across all analyses while accounting for potential missing data and unequal group sizes in demographic subgroup analyses.

Inclusion criteria: Above women aged 18 years, currently menstruating, able to read Turkish, and who provided informed consent.

Exclusion criteria: Participants who reported known pregnancy, current lactation, or history of gynecological surgery that prevents menstruation.

The sample consisted predominantly of young university students recruited through student and social networks; this has been explicitly acknowledged as a limitation for generalizability.

Data Collection (Google Forms and WhatsApp)

The questionnaire was administered via Google Forms and distributed through WhatsApp. This approach was selected due to the high smartphone

and WhatsApp usage rates among the target population and its practicality in reaching geographically diverse participants. Responses were collected anonymously; no identifying information was requested. Data were stored in an institutional Google account with restricted access and analyzed on password-protected devices.

Measures

Data collection tools used in the study:

Demographic information form: Developed by the researchers based on existing literature (Aydoğan et al., 2025; Oosterman et al., 2019); this form included questions on age, marital status, income, and residence. It also included items on health-related behaviors. The term “bad habits” referred to smoking and regular alcohol use. The question on age at first menstruation (age at menarche) was analyzed preliminarily but excluded from final mediation models as it was unrelated to main study variables.

Adverse Childhood Experiences Questionnaire (ACE): This tool was developed by Felitti et al. (1998), and the Turkish validity study was conducted by Gündüz et al. (2018) The scale has 10 items, each about a different ACE, which are either marked “yes” or left blank. The total score varies between 0 and 10. There is no cut-off value; higher scores indicate a greater number of ACEs. The Cronbach’s α of the ACE was found to be .74 in the Turkish validity and reliability study and Cronbach’s α = .66 in this study. Example item: Before the age of 18, Did a parent or other adult in the household often or very often push, grab, slap, or throw something at you? Or did they ever hit you so hard that you had marks or were injured? If even one instance occurred, please check “Yes.”

Sexual Myths Scale (SMS): This scale developed by Golbasi et al. (2016) consists of 28 items and has a 5-point Likert type. The scale consists of sexual orientation, gender, age and sexuality, sexual behavior, masturbation, sexual violence, sexual intercourse, and sexual satisfaction sub-dimensions. The responses are “1- *strongly disagree*,” “2- *disagree*,” “3- *undecided*,” “4- *somewhat agree*,” and “5- *strongly agree*.” In the Turkish validity and reliability study of the scale, Cronbach’s α = .91. Cronbach’s α in this sample was .91. Example items: “Masturbation has harmful physical effects” or another question “Homosexuality must be treated.”

Premenstrual Coping Measure (PCM): It was developed by Read et al. (2014) and adapted into Turkish by Abay and Kaplan (2020). This scale consists of 28 items including statements about coping with premenstrual syndrome symptoms. Each item of the scale, which consists of 5 sub-dimensions in 5-point Likert type, is scored between 1 and 5. In the Turkish

validity and reliability study of the scale, Cronbach's α value was found to be .92. Cronbach's α in this sample was .85. There is no evaluation on the total score of PCM. As the score obtained from the sub-dimensions of the measure increases, the ability to cope with premenstrual symptoms increases. The subscale items in the scale consist of avoiding harm (AH), awareness and acceptance of premenstrual change (AAPC), adjusting energy (AE), self-care (SC), and Communicating (Com). The *communication* sub-dimension of the PCM assesses individuals' ability to express their premenstrual experiences and seek social or emotional support from others (e.g., family, friends, or partners) during the premenstrual period. Therefore, this subscale reflects communication specifically related to coping with PMS, rather than general interpersonal communication skills. Example items: I am aware that the changes I experience during the premenstrual period are temporary.

Ethics

Ethical approval for the study was obtained from the Non-Interventional Clinical Research Ethics Committee of Marmara University Faculty of Health Sciences (Date: 29 December 2022; Approval No: 164). Permissions for scale use were obtained via e-mail. All participants provided informed consent, and ethical principles of the Declaration of Helsinki were observed. Participation was entirely voluntary, and participants were assured of the confidentiality and anonymity of their responses in accordance with established ethical research standards.

Data Analysis

Data were screened for completeness before analysis. Cases with more than 10% missing data were excluded, and mean substitution was applied for sporadic missing responses (<5%). Data were analyzed using **SPSS v26.0** (IBM Corp., Armonk, NY, USA). Descriptive statistics summarized sample characteristics. Normality was evaluated via the Shapiro–Wilk test and skewness/kurtosis. Student's *t*-tests and one-way ANOVA were applied for group comparisons. Pearson correlations tested variable relationships. Regression and Hayes' PROCESS Model 4 were used to assess mediation (ACE → SMS → PCM). Binary logistic regression examined predictors of clinically significant premenstrual problems (self-reported interference with daily life). The dependent variable was binary (yes/no). Predictor variables included total SMS score and PCM subscale scores, examined to determine which factors were associated with greater or

lesser likelihood of premenstrual difficulties. The backward likelihood ratio method produced a parsimonious final model.

Results

Sociodemographic Characteristics of Participants

The mean age of the women included in the study was 20.97 ± 2.06 years (range: 18–36 years). 60.5% ($n=387$) of the participants had middle income, 89.4% ($n=572$) had nuclear family structure, and 70.9% ($n=454$) lived in the city the longest. The characteristics of the women participating in the study are presented in Table 1.

Results in Table 1 indicate several significant relationships between demographic characteristics and psychological measures. Income groups showed significant differences in ACE total scores ($p=.037$) and SMS total scores ($p<.001$), with income less than expenses showing the highest SMS total scores ($M=59.38$, $SD=16.01$). It was observed that the communication sub-dimension scores of the coping with premenstrual syndromes scale were significantly lower in those with low-income level ($p<.05$, $M=11.10$, $SD=4.17$). In the scale scores according to the longest place of residence of the participants, the score of PCM-AH was found to be significantly lower in participants living in towns. ($p<.05$, $M=17.00$, $SD=5.29$).

ACE Distribution

Family structure analysis revealed significant differences in ACE total scores ($p=.007$), with extended families reporting higher scores ($M=1.87$, $SD=1.91$) compared to nuclear families ($M=1.29$, $SD=1.62$). Living arrangements also showed significant variations in ACE scores ($p=.015$), with independently living participants showing notably higher scores ($M=3.50$, $SD=1.87$).

Analysis of sibling relationships revealed significant differences in SMS total scores ($p<.001$), with participants having 6+ siblings showing the highest scores ($M=65.33$, $SD=11.74$) compared to only children ($M=47.68$, $SD=10.59$). Additionally, PCM-AAPC scores varied significantly by sibling count ($p=.020$), and PCM-SC scores showed significant differences across age groups ($p=.016$).

Approximately half of the women included in the study reported no ACE history (45%, $n=288$). About 18.9% ($n=121$) of women reported an ACE, 15.3% ($n=98$) had two, 7.8% ($n=50$) had three, 6.7% ($n=43$) had four, and 6.2% ($n=40$) had five or more ACEs. In line with prior ACE research, ACE

Table 1. Means, Standard Deviations, and Statistical Significance of ACE, Sexual Myths, and Premenstrual Coping Scores by Demographic Characteristics.

Characteristic	N	ACE Total	SMS	PCM-AH	PCM-AAPC	PCM-AE	PCM-SC	PCM-Com.
Income groups								
Income less than expenses	145	1.19 (1.62)	59.38 (16.01)	21.02 (7.00)	35.55 (7.65)	8.64 (2.20)	15.28 (3.92)	12.24 (4.50)
Income equals expenses	387	1.32 (1.61)	53.75 (14.94)	21.71 (5.94)	36.74 (6.81)	8.13 (2.88)	15.42 (3.36)	12.43 (4.21)
Income more than expenses	108	1.68 (1.83)	53.32 (14.90)	21.32 (6.67)	36.43 (6.70)	8.37 (2.83)	14.76 (3.70)	11.10 (4.17)
p-value		.037*	<.001***	.547	.345	.295	.306	.02*
Family structure								
Nuclear family	572	1.29 (1.62)	55.00 (15.60)	21.39 (6.27)	36.42 (7.12)	8.20 (2.83)	15.26 (3.63)	12.12 (4.31)
Extended family	68	1.87 (1.91)	54.56 (13.13)	22.31 (6.70)	36.41 (5.97)	9.03 (2.81)	15.46 (2.89)	12.53 (4.17)
p-value		.007**	.927	.154	.554	.054	.995	.386
Current living situation								
With family	384	1.32 (1.61)	55.35 (14.98)	21.49 (6.03)	36.55 (7.02)	8.29 (2.87)	15.32 (3.56)	12.32 (4.24)
With relatives	11	1.64 (2.11)	55.27 (9.08)	18.91 (6.85)	34.64 (6.22)	8.91 (3.02)	14.27 (3.55)	10.00 (3.79)
Student house	39	1.51 (1.39)	48.82 (13.36)	20.85 (7.76)	36.69 (7.03)	8.82 (3.09)	15.59 (3.51)	12.03 (4.71)
Student dormitory	200	1.30 (1.74)	55.41 (16.41)	21.70 (6.51)	36.04 (7.00)	8.15 (2.70)	15.19 (3.59)	11.93 (4.32)
Independent	6	3.50 (1.87)	53.67 (18.29)	23.00 (6.99)	41.50 (5.50)	8.00 (3.35)	15.17 (2.79)	15.17 (3.25)
p-value		.015*	.079	.548	.161	.434	.757	.125
Longest place of residence								
Village	44	1.59 (1.76)	56.48 (14.09)	21.91 (5.88)	35.89 (7.13)	8.66 (2.76)	15.25 (3.35)	11.86 (4.28)
Town	14	1.14 (1.92)	50.36 (13.00)	17.00 (5.29)	34.29 (9.38)	6.64 (2.47)	14.36 (4.14)	12.28 (5.17)
City	454	1.32 (1.63)	55.31 (15.95)	21.51 (6.30)	36.49 (7.08)	8.31 (2.87)	15.28 (3.51)	12.24 (4.33)
District	128	1.37 (1.71)	53.69 (13.70)	21.76 (6.49)	36.58 (6.39)	8.26 (2.74)	15.36 (3.72)	11.96 (4.07)
p-value		.579	.372	.048*	.797	.150	.751	.865

(continued)

Table 1. (continued)

Characteristic	N	ACE Total	SMS	PCM-AH	PCM-AAPC	PCM-AE	PCM-SC	PCM-Com.
Age groups								
18–21	531	1.26 (1.57)	55.25 (15.19)	21.47 (6.32)	36.52 (6.88)	8.25 (2.90)	15.47 (3.45)	12.20 (4.35)
22–25	101	1.74 (1.93)	54.22 (16.02)	21.47 (6.30)	36.07 (7.28)	8.46 (2.41)	14.34 (3.85)	12.03 (3.82)
26 and above	8	2.25 (2.66)	44.38 (14.99)	23.00 (7.01)	34.00 (11.05)	8.38 (3.70)	14.00 (4.81)	11.88 (6.20)
p-value		.071	.174	.560	.874	.649	.016*	.913
Number of siblings								
Only child	25	1.40 (1.35)	47.68 (10.59)	21.08 (6.95)	39.40 (4.71)	8.12 (2.64)	16.24 (3.79)	12.64 (4.64)
1–3 Siblings	474	1.26 (1.59)	54.06 (15.51)	21.42 (6.25)	36.47 (6.85)	8.28 (2.91)	15.29 (3.52)	12.12 (4.35)
4–5 Siblings	129	1.66 (1.89)	58.70 (14.72)	21.64 (6.49)	36.06 (7.57)	8.33 (2.68)	15.17 (3.59)	12.36 (4.07)
6+ Siblings	12	1.42 (1.73)	65.33 (11.74)	23.17 (5.98)	31.83 (8.20)	8.33 (2.06)	14.00 (3.93)	10.83 (3.76)
p-value		.152	<.001***	.932	.020*	.997	.151	.525

Note. Values in parentheses represent standard deviations. ACE = adverse childhood experience; SMS = sexual myths scale; PCM-AH = premenstrual coping measure-avoiding harm; PCM-AAPC = premenstrual coping measure-awareness and acceptance of premenstrual change; PCM-AE = premenstrual coping measure-adjusting energy; PCM-SC = premenstrual coping measure-self-care; PCM-Com. = premenstrual coping measure-communicating.

* $p < .05$. ** $p < .01$. *** $p < .001$.

scores were categorized as “none” versus “one or more” to distinguish participants with any history of childhood adversity, as subgroup sizes beyond this dichotomy were insufficient for stable comparison. The comparison of the scale scores of women according to the presence of ACEs is given in Table 2. As shown in Table 2, women without ACEs reported significantly higher SMS scores ($p < .01$), whereas women with one or more ACEs reported significantly lower Communication scores on the PCM ($p < .01$). No other subscales differed significantly by ACE history.

Mediation Analysis Results

The mediation analyses revealed several significant pathways between ACE total score and various PCM subscales through SMS total score in Table 3. A significant negative relationship was found between ACE and SMS (path a : $b = -0.954$, $p = .010$, 95% CI $[-1.675, -0.233]$). The analyses showed significant indirect effects for PCM awareness ($ab = 0.082$, $[0.013, 0.168]$) and PCM self-care ($ab = 0.024$, $[0.003, 0.058]$), indicating mediation through SMS. For PCM energy adaptation, while both total ($c = 0.141$, $p = .038$) and direct effects ($c' = 0.156$, $p = .022$) were significant, the indirect effect was not significant. PCM Communication showed significant total ($c = -0.322$, $p = .002$) and direct effects ($c' = -0.343$, $p = .001$), but no significant mediation. No significant effects were found for PCM-harm avoidance.

Binary Logistic Regression Analysis

A binary logistic regression analysis was conducted using backward likelihood ratio elimination method, and results are shown in Table 4.

This analysis was conducted to explore whether sexual myth endorsement and specific coping dimensions independently predicted the likelihood of experiencing clinically significant premenstrual problems, thereby extending the main mediation findings.

The initial model included six predictors: total SMS score, avoiding harm, awareness and acceptance of changes, energy adaptation, self-care, and communication. After backward elimination, three significant predictors remained in the final model.

Results indicated that total SMS score ($B = -0.018$, $SE = 0.005$, $p = .001$, $OR = 0.982$, 95% CI $[0.972, 0.993]$) and communication ($B = -0.057$, $SE = 0.019$, $p = .003$, $OR = 0.945$, $[0.910, 0.981]$) were negatively associated with the outcome. In contrast, energy adaptation showed a positive relationship ($B = 0.062$, $SE = 0.029$, $p = .032$, $OR = 1.064$, $[1.005, 1.126]$). For each unit increase in energy adaptation, the odds of the outcome increased by

Table 2. Scale Means and Statistical Significance According to ACE Status.

ACE status	n	SMS	PCM-AH	PCM-AAPC	PCM-AE	PCM-SC	PCM-Com.
None	288	56.94 (15.59)	21.57 (6.17)	36.07 (7.14)	8.05 (2.88)	15.14 (3.62)	12.68 (4.21)
1 or more	352	53.32 (14.96)	21.41 (6.43)	36.69 (6.87)	8.47 (2.78)	15.38 (3.49)	11.74 (4.31)
p		.002**	.560	.222	.086	.459	.005**

Note. Values are presented as *M* (*SD*). ACE = adverse childhood experience; SMS = sexual myths scale; PCM-AH = premenstrual coping measure-avoiding harm; PCM-AAPC = premenstrual coping measure-awareness and acceptance of premenstrual change; PCM-AE = premenstrual coping measure-adjusting energy; PCM-SC = premenstrual coping measure-self-care; PCM-Com. = premenstrual coping measure-communicating.

***p* < .01.

Table 3. Direct, Indirect, and Total Effects of ACE on Premenstrual Coping Subscales Through Sexual Myths.

Outcome Variable	Path	Effect	SE	t/z	p	95% CI
PCM-AH	Total effect (c)	-0.024	0.153	-0.156	.876	[-0.324, 0.277]
	Direct effect (c')	-0.011	0.154	-0.069	.945	[-0.313, 0.291]
	Indirect effect (ab)	-0.013	0.017 ^a	—	—	[-0.050, 0.019]
PCM-AAPC	Total effect (c)	-0.090	0.170	-0.530	.596	[-0.424, 0.244]
	Direct effect (c')	-0.173	0.168	-1.026	.305	[-0.503, 0.158]
	Indirect effect (ab)	0.082	0.039 ^a	—	—	[0.013, 0.168]*
PCM-AE	Total effect (c)	0.141	0.068	2.080	.038	[0.008, 0.275]*
	Direct effect (c')	0.156	0.068	2.295	.022	[0.023, 0.290]*
	Indirect effect (ab)	-0.015	0.010 ^a	—	—	[-0.039, 0.001]
PCM-SC	Total effect (c)	0.065	0.086	0.751	.453	[-0.104, 0.234]
	Direct effect (c')	0.040	0.086	0.468	.640	[-0.129, 0.209]
	Indirect effect (ab)	0.024	0.014 ^a	—	—	[0.003, 0.058]*
PCM-Com.	Total effect (c)	-0.322	0.103	-3.118	.002	[-0.524, -0.119]*
	Direct effect (c')	-0.343	0.104	-3.311	.001	[-0.546, -0.139]*
	Indirect effect (ab)	0.021	0.014	—	—	[-0.001, 0.055]
Path a	(ACE → SMS) ^b	-0.954	0.367	-2.597	.010	[-1.675, -0.233]*

Note. N = 640. Significant effects are marked with an asterisk (*). CI = confidence interval; ACE = adverse childhood experience; SMS = sexual myths scale; PCM-AH = premenstrual coping measure-avoiding harm; PCM-AAPC = premenstrual coping measure-awareness and acceptance of premenstrual change; PCM-AE = premenstrual coping measure-adjusting energy; PCM-SC = premenstrual coping measure-self-care; PCM-Com. = premenstrual coping measure-communicating.

^aSE for indirect effects based on bootstrap analysis with 5,000 samples.

^bPath a is constant across all mediation analyses as it represents the same relationship between ACE and SMS.

Table 4. Final Model: Binary Logistic Regression Predicting Clinically Significant Premenstrual Problems from Sexual Myths and Coping Subscales.

Variable	<i>B</i>	<i>SE</i>	Wald	<i>df</i>	<i>p</i>	<i>OR</i>	95% <i>CI</i>
SMS	-0.018	0.005	10.963	1	.001	0.982	[0.972, 0.993]
PCM_AE	0.062	0.029	4.615	1	.032	1.064	[1.005, 1.126]
PCM-Com.	-0.057	0.019	8.793	1	.003	0.945	[0.910, 0.981]
Constant	1.370	0.450	9.281	1	.002	3.935	—

Note. Final model after backward elimination. *CI* = confidence interval; *OR* = odds ratio; SMS = sexual myths scale; PCM-AE = premenstrual coping measure-adjusting energy; PCM-Com. = premenstrual coping measure-communicating.

6.4%, while increases in total SMS score and communication were associated with decreased odds of 1.8% and 5.5%, respectively.

Discussion

The findings of this study revealed that ACEs have significant effects on women's beliefs in sexual myths and coping with premenstrual symptoms. Regarding the first research question of the study, "Do adverse childhood experiences affect PMS?", no strong direct effects were observed except for the communication subscale of PMS. However, regression analyses showed that PMS communication subscale scores decreased significantly as ACE scores increased, suggesting that childhood traumas may negatively affect women's coping skills, especially in the interpersonal communication dimension. This finding aligns with existing literature indicating that early trauma particularly emotional neglect and abuse can impair the development of secure ability to express their premenstrual experiences and seek social or emotional support from others (e.g., family, friends, or partners) during the premenstrual period interpersonal skills, leading to reduced emotional expressiveness and social help-seeking (Lipsky et al., 2022; McKay et al., 2021; Rosada et al., 2023).

PMS coping and sexual myth beliefs may appear conceptually distinct at first; however, both are influenced by early adverse experiences and share underlying mechanisms related to body awareness, emotional regulation, and internalized gender norms. From this perspective, women's beliefs about sexuality may shape how they perceive and cope with premenstrual changes, making sexual myths a relevant psychological pathway linking ACEs and PMS coping.

Analyses related to the second question of the study, "Does ACE affect sexual myth beliefs?" showed that there was a significant positive relationship between ACE scores and sexual myth beliefs. This suggests that women

who had traumatic experiences in childhood may develop more attachment to social myths. It is frequently emphasized in the literature that cognitive distortions that develop after trauma can also be effective in belief systems related to sexuality (Demir-Kaya et al., 2023, Petruccioli et al., 2019). The suppression of trauma and lack of open discourse about sexuality in conservative or patriarchal family systems may lead to an increased reliance on culturally sanctioned myths as a means of psychological control or avoidance (Cetina 2024; Karaçam Yılmaz et al., 2024; Kukulu et al., 2009; Mohd Tohid & Haque, 2024). Especially in societies where issues related to sexuality are taboo, individuals' inability to process and suppress their traumas may pave the way for further internalization of such myths.

In the final logistic regression model, higher sexual myth scores and lower communication coping scores significantly predicted the likelihood of experiencing clinically significant premenstrual problems, even after accounting for other coping dimensions. Although the odds ratios indicate modest effects, these findings hold practical significance. Specifically, each unit increase in sexual myth endorsement was associated with approximately a 6% higher likelihood of reporting severe premenstrual difficulties, while each unit increase in communication coping corresponded to about a 5% reduction in this likelihood. This suggests that women who hold stronger sexual myths and who have difficulty expressing or discussing their symptoms with others are at higher risk of experiencing more severe PMS-related distress. Clinically, these results highlight the importance of addressing maladaptive sexual beliefs and strengthening communication-based coping skills in interventions aimed at managing premenstrual symptoms. From a psychiatric nursing perspective, integrating psychoeducation targeting both trauma-informed sexual cognition and interpersonal expression may therefore enhance women's emotional adjustment during the premenstrual phase.

The third and most striking finding was that sexual myths played a mediating role on some PMS coping sub-dimensions. Especially in the sub-dimensions of "awareness and acceptance" and "self-care," the effect of ACE was found to be significant indirectly through SMS. This finding suggests that trauma does not merely impair coping directly, but also operates through internalized belief systems that influence how women understand and manage their bodily experiences. When this finding is evaluated in the context of the PCM scale developed by Read et al. (2014), it coincides with the views that factors such as introversion, guilt, and low self-esteem that develop especially after trauma may impair communication skills.

Beyond individual-level effects, sociodemographic characteristics such as income, family type, and sibling number also shaped the observed patterns. Examining these variables provides important insight into how structural and cultural contexts influence women's experiences of trauma, sexuality, and

menstrual coping. Although these analyses were not the primary focus of the study, they provide complementary evidence on how social and economic structures interact with psychological mechanisms.

In the analyses conducted according to income status, it was observed that the sexual myth scores of the participants whose “income is less than their expenses” were significantly higher. This finding coincides with the literature suggesting that low-income level may limit access not only to physical but also to cognitive and cultural resources, making individuals more open to traditional, myth-based belief systems (Oğur et al., 2016). A significant difference was also found between family type and ACE scores; individuals who grew up in extended families had higher ACE scores. This suggests that extended family environments may increase the frequency of negative experiences that an individual may be exposed to, especially invisible traumas such as neglect and emotional abuse, which may be less noticeable in such structures (Struck et al., 2021). Similarly, it was observed that women living independently from their families had high ACE scores, and this group also had the lowest scores in the communication sub-dimension of PMS coping. This result suggests that individuals with a traumatic past both move away from social support systems and have difficulty in expressing their emotions (McKay et al., 2021).

When interpreted in a broader sociocultural framework, these patterns may reflect specific features of the Turkish context. Compared with studies conducted in Western populations, the average ACE scores in this sample appear slightly higher (McLaughlin et al., 2020; Petruccioli et al., 2019), which may be related to traditional family dynamics, multigenerational households, and cultural tolerance toward emotional neglect. Moreover, cultural attitudes toward menstruation and sexuality in Türkiye—often shaped by patriarchal norms, modesty expectations, and limited sexual education—may reinforce myth-based beliefs and restrict open communication about premenstrual symptoms (Karaçam Yılmaz et al., 2024; Kukulu et al., 2009). These cultural dynamics likely intersect with socioeconomic inequalities to influence both coping with PMS and the internalization of sexual myths, emphasizing that women’s psychological responses are deeply embedded in their social and cultural environments.

In terms of the number of siblings, the fact that the sexual myth scores of individuals with six or more siblings were significantly higher suggests that individual sexual education is neglected in crowded families, and myths are passed down from generation to generation. It is also noteworthy that PMS awareness and acceptance levels are lower in these individuals. These findings suggest that not only psychological but also social structures play a role in the perception of PMS and sexuality (Kukulu et al., 2009).

Finally, although the age variable did not show a significant difference in some sub-dimensions, it is noteworthy that the ACE score increased slightly as the age group increased. This may be related to a clearer recall of past traumas or increased awareness as age increases (Petruccieli et al., 2019).

In the light of these findings, it is understood that improving women's coping competencies with PMS and their perceptions of sexuality may be possible not only through individual psychoeducation but also through multidimensional interventions that take into account cultural, economic, and social factors.

The findings of the study have important implications for psychiatric nursing practice. Instead of focusing only on symptom management in individuals with ACE, it is important to focus on the individual's belief systems, especially false beliefs about sexuality and communication skills. Interventions including psychoeducation, trauma-focused cognitive behavioral therapies, and gender sensitivity can both reduce their symptom burden and improve their functioning (Struck et al., 2021; WHO, 2020).

Some limitations of this study should also be considered. Data collection through self-report may be vulnerable to social acceptance bias. Moreover, as data were collected online, potential sampling bias toward younger, more digitally connected women and data privacy risks may have influenced the results. In addition, since the study sample was limited to university-aged young women, its generalizability is limited. It is recommended that future studies should include different age groups and socioeconomic levels.

Acknowledgments

We thank all participants who agreed to participate in our study.

ORCID iDs

Arzu Aydoğan  <https://orcid.org/0000-0001-9924-0589>

Fadime Bayri Bingöl  <https://orcid.org/0000-0002-0304-6165>

Elif Yildirim  <https://orcid.org/0000-0003-1645-3971>

Hilal Maşalacı  <https://orcid.org/0000-0002-4231-0993>

Ethical Considerations

Ethical approval for the study was obtained from the Non-Interventional Clinical Research Ethics Committee of Marmara University Faculty of Health Sciences (Date: 29 December 2022; Approval No: 164). Permissions for scale use were obtained via e-mail. All participants provided informed consent, and ethical principles of the Declaration of Helsinki were observed. Participation was entirely voluntary, and participants were assured of the confidentiality and anonymity of their responses in accordance with established ethical research standards.

Funding

The authors received no financial support for the research and/or authorship of this article.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interests with respect to the authorship and/or publication of this article.

Data Availability Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request. The data are not publicly available due to privacy or ethical restrictions.

References

- Abay, H., & Kaplan, S. (2020). Validation and reliability of the Turkish Premenstrual Coping Measure. *Bezmîâlem Science*, 8(3), 289–299. <https://doi.org/10.14235/bas.galenos.2019.3608>
- Aydoğan, A., Karaçam Yılmaz, Z. D., Bayrı Bingöl, F., Can Gürkan, Ö., & Altıparmak, Ş. N. (2025). Do adverse childhood experiences increase the risk of postpartum traumatic stress and depression? *Journal of Evaluation in Clinical Practice*, 31(3), Article e14176. <https://doi.org/10.1111/jep.14176>
- Cetina, A. (2024). The psychological and physical effects of sex taboos. *Journal of Student Research*, 13(1), 1–13. <https://doi.org/10.47611/jsrhs.v13i1.6355>
- Çoban, B., & Karlı, K. (2023). Effects of premenstrual syndrome on appetite and food preference. *Kastamonu University Journal of Faculty of Health Sciences*, 2(2), 19–28. <https://doi.org/10.59778/sbfgdergisi.1312932>
- Demir-Kaya, M., Kaya, F., & Eroğlu, Y. (2023). Interpersonal cognitive distortions: What is the role of childhood trauma and attachment? *Journal of Education in Science, Environment and Health*, 9(4), 292–309. <https://doi.org/10.55549/jeseh.1381214>
- Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2009). Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods*, 41(4), 1149–1160. <https://doi.org/10.3758/BRM.41.4.1149>
- Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., Koss, M. P., & Marks, J. S. (1998). 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*, 14(4), 245–258. [https://doi.org/10.1016/S0749-3797\(98\)00017-8](https://doi.org/10.1016/S0749-3797(98)00017-8)
- Golbasi, Z., Evcili F., Eroglu K., Bircan H. (2016). Sexual myths scale (sms): development, validity and reliability in Turkey. *Sexuality and Disability* 34(1), 75–87. <https://doi.org/10.1007/s11195-016-9430-3>

- Gül, S., & Şimşek Çetinkaya, Ş. (2024). Relationship between sexual myth and sexual attitudes in Turkish women and associated factors: A correlational study. *Andrology Bulletin*, 26, 8–15. <https://doi.org/10.24898/tandro.2024.87059>
- Gündüz A., Yaşar A.B., Gündoğmuş İ., Savran C. Konuk E. (2018). Adverse Childhood Events Turkish Form: validity and reliability study. *Anatolian Journal of Psychiatry*, 19 (1), 68–75. <https://doi.org/10.5455/apd.294158>
- Karaçam Yılmaz, Z. D., Şen, E., Ergin, G., Hasgül, E., & Tokman, E. (2024). Sexual myths between genders. *Gevher Nesibe Journal of Medical & Health Sciences*, 9(1), 175–181. <https://doi.org/10.5281/zenodo.10721911>
- Kukulu, K., Gursoy, E., & Ak Sözer, G. (2009). Turkish university students' beliefs in sexual myths. *Sexuality and Disability*, 27(1), 49–59. <https://doi.org/10.1007/s11195-009-9108-1>
- Lipsky, R. K., McDonald, C. C., Souders, M. C., Carpio, C. C., & Teitelman, A. M. (2022). Adverse childhood experiences, the serotonergic system, and depressive and anxiety disorders in adulthood: A systematic literature review. *Neuroscience & Biobehavioral Reviews*, 134, Article 104495. <https://doi.org/10.1016/j.neubio-rev.2021.12.018>
- McKay, M. T., Cannon, M., Chambers, D., Conroy, R. M., Coughlan, H., Dodd, P., Healy, C., O'Donnell, L., & Clarke, M. C. (2021). Childhood trauma and adult mental disorder: A systematic review and meta-analysis of longitudinal cohort studies. *Acta Psychiatrica Scandinavica*, 143(3), 189–205. <https://doi.org/10.1111/acps.13268>
- McLaughlin, K.A., Colich, N.L., Rodman, A.M. et.al.(2020). Mechanisms linking childhood trauma exposure and psychopathology: a transdiagnostic model of risk and resilience. *BMC medicine*, 18(1), 96. <https://doi.org/10.1186/s12916-020-01561-6>
- Mohd Tohit, N. F., & Haque, M. (2024). Forbidden conversations: A comprehensive exploration of taboos in sexual and reproductive health. *Cureus*, 16(8), Article e66723. <https://doi.org/10.7759/cureus.66723>
- Oğur, P., Utkualp, N., & Aydınoğlu, N. (2016). The beliefs of school of health students about sexuality. *Journal of Continuing Medical Education*, 25(1), 13–21.
- Oosterman, M., Schuengel, C., Forrer, M. L., & De Moor, M. H. M. (2019). The impact of childhood trauma and psychophysiological reactivity on at-risk women's adjustment to parenthood. *Development and Psychopathology*, 31(1), 127–141. <https://doi.org/10.1017/S0954579418001591>
- Özkan, S., & Koç, G. (2020). Social and cultural factors affecting premenstrual syndrome experience in women. *Journal of Hacettepe University Faculty of Nursing*, 7(2), 180–185. <https://doi.org/10.31125/hunhemsire.763193>
- Paslı, F. (2020). Child physical abuse. *Journal of Social Policy and Social Work Studies*, 1(1), 60–72.
- Petrucelli, K., Davis, J., & Berman, T. (2019). Adverse childhood experiences and associated health outcomes: A systematic review and meta-analysis. *Child Abuse & Neglect*, 97, Article 104127. <https://doi.org/10.1016/j.chiabu.2019.104127>

- Read, J. R., Perz, J., & Ussher, J. M. (2014). Ways of coping with premenstrual change: Development and validation of a premenstrual coping measure. *BMC Women's Health, 14*, 1. <https://doi.org/10.1186/1472-6874-14-1>
- Rosada, C., Bauer, M., Golde, S., Metz, S., Roepke, S., Otte, C., Buss, C., & Wingenfeld, K. (2023). Childhood trauma and cortical thickness in healthy women, women with post-traumatic stress disorder, and women with borderline personality disorder. *Psychoneuroendocrinology, 153*, Article 106118. <https://doi.org/10.1016/j.psyneuen.2023.106118>
- Struck, S., Stewart-Tufescu, A., Asmundson, A. J. N., Asmundson, G. G. J., & Afifi, T. O. (2021). Adverse childhood experiences (ACEs) research: A bibliometric analysis of publication trends over the first 20 years. *Child Abuse & Neglect, 112*, Article 104895. <https://doi.org/10.1016/j.chiabu.2020.104895>
- Torun, F., Torun, S. D., & Özeydin, A. N. (2011). Men's belief in sexual myths and factors affecting these myths. *Düşünen Adam: The Journal of Psychiatry and Neurological Sciences, 24*(1), 24–31. <https://doi.org/10.5350/DAJPN2011240103>
- UNICEF. (2022). *Türkiye child survey 2022*. Turkish Statistical Institute. https://www.tuik.gov.tr/media/announcements/turkiye_cocuk_arastirmasi.pdf
- UNICEF. (2024, October 10). *Press release*. <https://www.unicef.org/turkiye/topics/cinsel-istismar>
- World Health Organization (WHO). (2020). *Adverse childhood experiences international questionnaire (ACE-IQ)*. [https://www.who.int/publications/m/item/adverse-childhood-experiences-international-questionnaire-\(ace-iq\)](https://www.who.int/publications/m/item/adverse-childhood-experiences-international-questionnaire-(ace-iq))

Author Biographies

Arzu Aydoğan received her PhD in Psychiatric Nursing in 2018 and currently works as an assistant professor in the Department of Psychiatric Nursing at the Faculty of Health Sciences, Ankara Yüksek İhtisas University. Her research focuses on adverse childhood experiences, fear of childbirth, postpartum trauma and depression, as well as the use of digital tools in coping processes. She has published studies such as “Do adverse childhood experiences increase the risk of postpartum traumatic stress and depression?” and “Are smartphones a tool to cope with the fear of childbirth?”

Fadime Bayrı Bingöl received her PhD in Psychiatric Nursing in 2014 and currently works as an associate professor in the Department of Midwifery at the Faculty of Health Sciences, Istanbul Marmara University. Her research focuses on adverse childhood experiences, fear of childbirth, postpartum trauma and depression, as well as the use of digital tools in coping processes. She has published studies such as “Do adverse childhood experiences increase the risk of postpartum traumatic stress and depression?” and “Are smartphones a tool to cope with the fear of childbirth?”

Elif Yildirim graduated from Marmara University, Faculty of Health Sciences, Department of Midwifery in 2023. She is a midwife and currently working at the Ministry of Health, Dr. Lutfi Kirdar City Hospital in Istanbul.

Hilal Maşalacı graduated from Marmara University, Faculty of Health Sciences, Department of Midwifery in 2023. She is a midwife and currently working at the Ministry of Health, Dr. Lutfi Kirdar City Hospital in Istanbul.

İrem Nur Uzun graduated from Marmara University, Faculty of Health Sciences, Department of Midwifery in 2023. She is a midwife and currently working at the Avicenna International Hospital in Istanbul.

Zalihe Yarkıner is a Cypriot scientist specializing in biostatistics and medical statistics. She earned her BSc in Mathematics with Business Management and completed her PhD in Medical Statistics at Kingston University, London. Her research focuses on statistical modeling in healthcare, particularly chronic disease monitoring and women's health. She has worked as a senior data analyst at the Royal College of Physicians and is currently an Assistant Professor at Cyprus International University. She is a member of the Royal Statistical Society and other professional groups, contributing actively to research and education in biostatistics and applied health data analysis.