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The relationship between sleep and quality of sexual life in pregnant women

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Abstract

This study aimed to explore the relationship between sleep quality and quality of sexual life in pregnant women. This cross-sectional and correlational study was conducted with 362 pregnant women. Data were collected using a "Sociodemographic Information Form", the "Cumhuriyet Subjective Sleep Quality Scale (CSSQS)", and the "Sexual Quality of Life Questionnaire-Female (SQLQ-F)". Descriptive statistics, pearson correlation analysis, and simple linear regression analysis were used for data analysis. There was a statistically significant negative correlation between the mean scores of the pregnant women on CSSQS and its subscales and their mean scores on SQLQ-F ($p<0.05$). It was seen that the sleep quality of pregnant women had a significant negative effect on their quality of sexual life ($p<0.001$). In pregnant women, the level of sleep quality explained 30.4% of the quality of sexual life. It was concluded that their quality of sexual life was negatively affected as pregnant women sleep quality decreased. *(Afr J Reprod Health 2024; 28 [5]: 30-38).*

Keywords: Pregnancy, sleep quality, quality of sexual life

Résumé

Cette étude visait à explorer la relation entre la qualité du sommeil et la qualité de la vie sexuelle chez les femmes enceintes. Cette étude transversale et corrélative a été menée auprès de 362 femmes enceintes. Les données ont été collectées à l'aide d'un "Formulaire d'informations sociodémographiques", de l'échelle " Échelle subjective de qualité du sommeil de la République (ESQSR)" et du " Échelle de qualité de vie sexuelle - Formulaire féminin (EQS-FF)". Des statistiques descriptives, une analyse de corrélation de Pearson et une analyse de régression linéaire simple ont été utilisées pour l'analyse des données. Il y avait une corrélation négative statistiquement significative entre les scores moyens des femmes enceintes sur le ESQSR et ses sous-échelles et leurs scores moyens sur le EQS-FF -F ($p<0,05$). Il a été constaté que la qualité du sommeil des femmes enceintes avait un effet négatif significatif sur leur qualité de vie sexuelle ($p<0,001$). Chez les femmes enceintes, le niveau de qualité du sommeil expliquait 30,4 % de la qualité de la vie sexuelle. Il a été conclu que leur qualité de vie sexuelle était affectée négativement lorsque la qualité du sommeil des femmes enceintes diminuait. *(Afr J Reprod Health 2024; 28 [5]: 30-38).*

Mots-clés: Grossesse, qualite du sommeil, qualité de vie sexuelle

Introduction

Although pregnancy is a physiological period, it is accompanied by many physiological, psychological, and social changes[1]. These changes that pregnant women experience may cause sleep disorders in pregnant women. However, the exact incidence of sleep disorders in pregnant women is unknown. In the literature, it has been reported that sleep disorders increase starting from the first trimester to the third trimester. During the third trimester of pregnancy, 97% of women have been reported to experience sleep disorders[2,3]. Sleep disorders experienced by pregnant women vary from simple snoring to obstructive sleep apnea. However, snoring, insomnia, respiratory sleep disorders, and restless legs syndrome can be frequently seen during this period[4]. These disorders can be triggered by pregnancy-related hormonal and physiological changes, physical factors, pregnancy-specific complaints, and psychological changes[5-7].

Sleep quality can be defined as being able to feel fit, energetic, and ready for a new day after

waking up. Sleep quality includes quantitative aspects of sleep such as sleep latency, sleep duration, and number of awakenings during the night, and subjective aspects such as depth of sleep and its restfulness[8,9]. Sleep problems encountered during pregnancy can lead to problems such as poor sleep quality, increased fear and anxiety, preterm delivery, low birth weight of infants, and postpartum depressive symptoms[10-13].

Sexuality is a concept that begins in the prenatal period and continues throughout life, is shaped by the influence of many factors such as people's value judgments and beliefs, and includes not only the sexual organs but the entire body and mind[14,15]. The vascularity in the female sexual organs increases with the pregnancy-related hormonal changes; therefore, the sensitivity in the breasts and vagina increases. In parallel with this physiologic change, women may become more eager and sensitive to sexual intercourse during this period. These changes may sometimes cause discomforting conditions such as vulvar pain and urinary incontinence, especially in the later weeks of pregnancy. Such conditions can disturb not only the woman but also her partner sometimes. These changes during pregnancy can have both positive and negative effects on sexuality[16,17].

In the literature, there are studies on sleep quality and coping methods of pregnant women in the last trimester, the effect of sleep quality on quality of life, the relationship between sleep quality and perceived stress, the quality of sexual life of breastfeeding women in the postpartum period, and the quality of sexual life of women in climacteric period[7,10,12,18,19]. However, there is no study in which the relationship between sleep quality and quality of sexual life during pregnancy has been investigated. For this reason, this study aimed to determine the relationship between sleep quality and quality of sexual life in pregnant women.

Methods

Research design and participants

The data of this descriptive and correlational study were collected online using Google forms between August 20 and November 30, 2023. The population consisted of pregnant women living in the Central Black Sea Region of Turkey. The purposive sampling method was used and 362 pregnant women who were literate, had access to the internet and social media, did not have a diagnosed psychiatric illness, did not have mental disability and communication problems, were diagnosed with intrauterine pregnancy, were not restricted from sexual activity by their physicians, were healthy, and volunteered to participate in the study were included in the study.

Data collection tools

The study data were collected using a "Sociodemographic Information Form", the "Cumhuriyet Subjective Sleep Quality Scale", and the "Sexual Quality of Life Questionnaire-Female".

Sociodemographic information form (SDIF): The sociodemographic information form was prepared by the researchers in line with the literature and consists of 13 items regarding sociodemographic characteristics such as age, employment status, educational status, status of using of tobacco, alcohol, and coffee, and pregnancy[1,10,12,16].

Cumhuriyet Subjective Sleep Quality Scale (CSSQS): The scale was developed by Sarıçam to assess the subjective sleep quality of adults. All items of the scale are scored between 0 and 3. The minimum score obtainable from the scale is 0 and the maximum score is 54. The scale consists of 18 items and 3 subscales: "psychosomatic effects (5 items)", "sleep course (7 items)", and "sleep satisfaction (6 items)". An increase in the total scale score indicates a decrease in sleep quality[20]. The Cronbach α coefficient of the original scale was 0.91. In this study, the Cronbach α coefficient was found to be 0.81.

Sexual Quality of Life Questionnaire-Female (SQLQ-F): The scale aims to assess the quality of sexual life. Its validity and reliability were established by Tuğut and Gölbaşı. The scale consists of 18 items and each item is scored between 1 and 6. The minimum score possible is 18 and the maximum score is 108. A high score on the scale indicates a good quality of sexual life[21]. The Cronbach α coefficient of the original scale was 0.83. In the current study, the Cronbach α coefficient was found to be 0.90.

Data collection

The data were collected through online surveys and social media tools (such as WhatsApp, Instagram, Facebook). The necessary information about the research was given in the form and the "I voluntarily agree/disagree to participate in the research" button was added. After consent was taken from all participants, they were asked to fill in the form. The reason why we decided on online data collection was that the research was about the private lives of individuals. For this reason, it was thought that the online form could be easily answered by women in safe areas where they could feel comfortable. With this method based on self-reporting, it is thought that the reliability of the data also increased.

Statistical analysis

SPSS (Statistical Package for Social Sciences) for Windows 25.0 program was used for data analysis. Number, percentage, minimum, maximum, median, mean, and standard deviation were used in the analysis of descriptive data. Skewness and kurtosis values were analyzed to test the normal distribution of the data (+1,-1). Normally distributed data are presented as mean and standard deviation values. In the evaluation of normally distributed data, independent samples t-test and One-Way ANOVA were used as parametric tests. Pearson correlation analysis was used to examine the relationship between the data and simple linear regression analysis was used to determine the predictive power. In the statistical tests, a confidence interval of 95% and a significance level of $p<0.05$ were considered.

Ethical considerations

Prior to the research, ethics committee approval was obtained from the Social Sciences and Humanities Research Ethics Committee of a university on 08/15/2023 with the decision number 01-39. Since the data were collected online, the purpose and importance of the research were explained at the beginning of the form and a space was created for the participants to give their consent. Participants could not proceed to the next page without giving their consent. In this way, the 'Principle of Informed Consent' was fulfilled. Again, in the same area, the participants were told that they could withdraw from the research at any time, ensuring compliance with the "Principle of Autonomy", that individual information would be protected, ensuring compliance with the "Principle of Confidentiality and Protection of Privacy", and that the information obtained and the identity of the respondents would be kept confidential, ensuring compliance with the "Principle of Anonymity and Safety". This study has been conducted in accordance with the principles set forth in the Helsinki Declaration.

Results

The mean age of the pregnant women was 28.95±16.29; the mean number of pregnancies was 2.10±1.14; the mean gestational week was 33.93±5.62. Sociodemographic and some obstetric characteristics of the pregnant women are presented in Table 1.

The mean scores of the pregnant women on the CSSQS and SQLQ-F are shown in Table 2. The mean scores of the pregnant women were 8.20±3.41 for the psychosomatic effects subscale of the CSSQS, 10.94±3.75 for the sleep course subscale, 8.22±3.50 for the sleep satisfaction subscale, and 27.38±9.06 for the total scale. The mean score on SQLQ-F was 77.93±17.45.

Table 3 shows the comparison of the mean scores of the pregnant women on CSSQS and its subscales according to their sociodemographic. There was no statistically significant difference between place of residence, educational status, family type, type of marriage, income status, and status of having a planned pregnancy and the mean scores on CSSQS and its subscales ($p>0.05$). There was a statistically significant difference between employment status and smoking status, the mean scores on CSSQS ($p<0.05$). There was no statistically significant difference between age, number of pregnancies, and gestational week and the mean scores on CSSQS and its subscales ($p>0.05$).

Table 4 shows the comparison of SQLQ-F mean scores of pregnant women according to their sociodemographic and some obstetric characteristics. There was a statistically significant correlation between the number of pregnancies and the mean SQLQ-F score ($p<0.05$). The mean score on SQLQ-F decreased as the number of pregnancies

Table 1: Sociodemographic and some obstetric characteristics of the pregnant women

Variable		n	%
Employment Status	Employed	79	21.8
	Unemployed	283	78.2
Place of Residence	City	172	47.5
	Town	155	42.8
	Village	35	9.7
Educational Status	Primary school	92	25.4
	High school	164	45.3
	University and above	106	29.3
Family Type	Nuclear Family	309	85.4
	Extended Family	53	14.6
Type of Marriage	Prearranged Marriage	60	16.6
	Companionate Marriage	302	83.4
Income Status	Income Less Than Expenses	82	22.6
	Income Equal to Expenses	254	70.2
	Income More Than Expenses	26	7.2
Smoking	Yes	39	10.8
	No	323	89.2
Alcohol Use	Yes	6	1.7
	No	356	98.3
Daily Coffee Consumption	Yes	109	30.1
	No	253	69.9
Planning of Pregnancy	Planned Pregnancy	275	76.0
	Unplanned Pregnancy	87	24.0

Table 2: Mean scores of pregnant women on CSSQS and SQLQ-F

Scales		Mean±SD	Median	Minimum	Maximum
CSSQS	Psychosomatic effects	8.20±3.41	8	0	15
	Sleep course	10.94±3.75	11	2	21
	Sleep satisfaction	8.22±3.50	8	0	17
	Total	27.38±9.06	26	6	53
SQLQ-F		77.93±17.45	83	18	100

Table 3: Comparison of the mean scores of pregnant women on CSSQS and its subscales according to their sociodemographic

Variables	*CSSQS* Psychosomatic effects	Sleep Course	Sleep Satisfaction	Total
Employment Status				
Employed	7.54±3.26	10.55±3.25	7.38±3.36	25.44±7.94
Unemployed	8.38±3.44	11.04±3.88	8.43±3.50	27.91±9.01
t=	2.000	1.030	2.428	2.355
p=	0.048	0.303	0.017	0.020
Smoking				
Yes	9.33±3.69	12.05±3.82	9.61±3.91	31.00±10.18
No	8.06±3.36	10.80±3.73	8.04±3.41	26.94±8.57
t=	2.200	1.960	2.676	2.732
p=	0.028	0.051	0.008	0.007
Daily Coffee Consumption				
Yes	8.40±3.66	11.36±3.63	8.87±3.92	28.67±9.54
No	8.11±3.30	10.75±3.79	7.92±3.26	26.82±8.47
t=	0.280	1.415	2.354	1.826
p=	0.462	0.158	0.019	0.069

F: One-way ANOVA; t: Independent samples t-test; r: Pearson's correlation coefficient: a-b: There is no significant difference between values assigned with the same letter

Table 4: Comparison of mean SQLQ-F scores of pregnant women according to their sociodemographic and pregnancy characteristics

Variables	SQLQ-F
Number of pregnancies	r=0.183**
	p=0.001
Educational status	
Primary school	69.60±19.86[a]
High school	79.32±16.20[b]
University and above	82.78±14.58[b]
F=	15.901
p=	0.000
Income status	
Income less than expenses	73.08±18.48[a]
Income equal to expenses	73.37±18.51[a]
Income more than expenses	79.95±16.67[b]
F=	5.760
p=	0.003
Type of marriage	
Prearranged marriage	71.50±19.22
Companionate marriage	79.22±16.82
t=	3.138
p=	0.002
Planning of pregnancy	
Planned pregnancy	79.43±16.53
Unplanned pregnancy	73.35±19.40
t=	2.845
p=	0.005

F: One-way ANOVA; t: Independent samples t-test; r: Pearson's correlation coefficient: a-b: There is no significant difference between values assigned with the same letter

increased. There was no statistically significant difference between place of residence, employment status, family type, smoking status, and daily coffee consumption and the mean SQLQ-F score ($p>0.05$). There was a statistically significant difference between the mean SQLQ score and educational status, income status, type of marriage, and planning of pregnancy ($p<0.05$). There was no statistically significant correlation between age and gestational week and the mean SQLQ-F score of the pregnant women ($p>0.05$).

Table 5 shows the relationship between the mean CSSQS and SQLQ-F scores. There was a statistically significant negative correlation between the mean scores of the pregnant women on CSSQS and its subscales and their mean score on SQLQ-F ($p<0.05$). Accordingly, the mean SQLQ-F score decreased as the mean scores on the psychosomatic effects and sleep satisfaction subscales and the total CSSQS increased.

Table 6 shows the results of simple linear regression analysis to determine the effect of sleep quality on the quality of sexual life in pregnant women. According to the table, sleep quality had a significant negative effect on the quality of sexual life ($p<0.001$). According to this result, the level of sleep quality explained 30.4% of the quality of sexual life in pregnant women. A 1-unit increase in the level of sleep quality caused a 0.334-unit decrease in the quality of sexual life.

Table 5: The relationship between the mean scores on CSSQS and SQLQ-F

		CSSQS			
		Psychosomatic effects	Sleep course	Sleep satisfaction	Total
SQLQ-F	r	-.145**	-0.096	-.181**	-.172**
	p	0.006	0.073	0.001	0.001

**Correlation is significant at the 0.01 level (2-tailed).

Table 6: Results of regression analysis on the predictive power of sleep quality of pregnant women on their quality of sexual life

	β	t	P
Sleep quality	-0.334	-3.265	0.001
R^2=0.030 F=10.659 p<0.001			

Discussion

Sleep covers one-third of human life. Therefore, it is not only a part of daily life but also a vital part of life in which all organs, especially the brain, renew themselves. In human life, sleep is as important as eating, drinking, and breathing in terms of protecting psychological and physical health. Quality sleep patterns affect every aspect of life as well as sexual life. In this direction, the findings of the study in which the relationship between sleep quality and sexual life quality in pregnant women was examined were discussed in line with the literature.

In the study, it was determined that the level of sleep quality of pregnant women was poor according to their mean total score on CSSQS. In studies on sleep quality during pregnancy, it was generally concluded that sleep quality was poor in

pregnant women[22-24]. Moreover, in the literature, it has been shown that poor sleep quality was common among pregnant women in Northwestern University (40%), Vietnam (41.2%), Iran (43.8%), Taiwan (24.4%), Finland (16%), Turkey (31.5%), and in a global meta-analysis study (45.7%)[25]. It can be suggested that the possible reasons for the inconsistency in the studies are the characteristics of participants, sample selection and scale used. The reason why the findings of this study differ from some findings in the literature is thought to be associated with the presence of different sociodemographic characteristics, online data collection. In the study, it was found that sleep quality was significantly higher in pregnant women who were unemployed, did not smoke, and consumed less coffee. These results were expected. Because caffeinated substances are rapidly and almost completely (99%) absorbed in the body. Caffeine blocks inhibitory substances in sleep-wake patterns and triggers wakefulness, which leads to insomnia[26].

In the study, it was determined that the quality of sexual life of pregnant women was above the moderate level according to their mean score on SQLQ-F. In similar studies conducted in the literature, it was observed that the quality of sexual life of pregnant women was generally above average and was also influenced by sociodemographic and obstetric characteristics[27-32]. In the study, it was determined that the high number of pregnancies negatively affected the quality of sexual life of pregnant women. The results of the study conducted by Şahingöz are consistent with this study[33]. This may be associated with the inability of women with children to spare time for themselves and their spouses due to excessive workload (such as spending time for their child/children), while they should go to regular follow-ups and spend more time for themselves during this period. It was observed that the quality of sexual life of pregnant women increased as their education level and income increased. Similarly, in the literature, it has been reported that the quality of sexual life increased as the level of education and income increased[29,31-33]. On the contrary, it was observed that education level, in the study of Değerli Kodaz and Ege, and economic status, in the study of Çelimli Oruç, did not make a difference[34,35]. It is thought that a higher education level may positively affect the sexual lives of couples as they are more knowledgeable about sexuality and understand each other better. A good income status may be associated with the fact that couples are happier because they do not have problems in this sense and this reflects on sexual life. The quality of sexual life of pregnant women increased as the couples had a companionate marriage, and the pregnancies were planned. In the literature, it has been reported that love marriages provide more emotional intimacy compared to prearranged marriages, that these couples have more contact with their families, that they show more equalitarian attitudes, that they have less conflict, and that their sexual satisfaction is high[36-38].

In the study, it was found that the quality of sexual life of pregnant women was negatively affected as their sleep quality decreased. The results in the literature also support this study. In relevant studies, it has been found that women with sleep apnea have more disorders in their sexual life than women without sleep apnea. It has been stated that when there is no regular sleep pattern, sexual functioning is also negatively affected by the disruption in the functioning of the body[39,40]. When a woman does not get enough sleep, it causes fatigue and exhaustion, leading to sexual anorexia. It has been reported that people who sleep less have more sexual anorexia than those who sleep well. People who sleep extremely little have more difficulty in their sexual activities and are more tend to depression than people with minimal sleep problems[41]. Kalmbach *et al*. reported that the duration, quality, and restfulness of sleep significantly increased subsequent sexual desire[42]. Varquez *et al*. made this comparison from a different perspective and concluded that conditions that negatively affect sexual life in women are associated with poor sleep quality[43]. The results of the studies in the literature are consistent with the results of this study, but the samples of the studies include not pregnant women but only women. At this point, it is thought that more studies should be conducted on pregnant women.

Conclusion and Recommendations

In line with the findings of the study in which the relationship between sleep quality and quality of sexual life in pregnant women was examined, it was concluded that the level of sleep quality of pregnant

women was moderate, that their quality of sexual life was above the moderate level, and that the quality of sexual life of pregnant women was negatively affected as their sleep quality decreased. In line with these results, it is recommended that sleep quality and quality of sexual life of pregnant women be evaluated during the follow-up, that risk factors be identified, and that appropriate counseling services be provided to pregnant women who have problems at this point. To carry out this counseling service, professionals such as midwives, nurses, and obstetricians need to master the practices and care behaviors that can improve sleep and quality of sexual life in pregnant women. Furthermore, it is recommended that studies that develop alternative methods to improve sleep quality and quality of sexual life during pregnancy be conducted.

Conflict of interest

The authors report there are no competing interests to declare.

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Authors' contribution

Design of the study: SÖA, ZYE
Acquisition of data: SÖA
Analysis and interpretation of data: SÖA, ZYE
Study supervision: SÖA, ZYE
Manuscript writing: SÖA, ZYE
Critical revisions for important intellectual content: SÖA, ZYE
All authors contributed to the article and approved the submission.

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