

# Quality of Life and Its Related Factors in Pregnant Women Referring to Health Centers

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## Abstract

**Background:** Pregnancy is one of the most sensitive stages of a woman's life, and changes in this time can have important effects on the quality of life (QoL) of women. Therefore, this study aimed to assess QoL and its related factors in pregnant women referring to health centers.

**Methods:** This cross-sectional study was performed on 417 pregnant women who referred to Neyshabur health centers in 2021 using stratified random sampling. Data collection was carried out using demographic characteristics and QoL. Descriptive statistics (mean and standard deviation) analytical statistics (ordinal regression) were employed, data analysis was performed by SPSS software version 22, and the significance level was considered 0.05.

**Results:** The mean  $\pm$  standard deviation of pregnant women was  $28.36 \pm 5.96$  years old. Physical health was the lowest and mental health was the highest aspect of women's QoL. Most participants (49.16%) had moderate QoL. It was also found that employment (adjusted odds ratio [AOR]=2.34, 95% CI: 1.03-5.30) and good sleep quality (AOR=4.85, 95% CI: 2.99-7.01) were statistically significant variables in relation to QoL.

**Conclusion:** According to an undesirable and moderate QoL in pregnant women, it is recommended that interventions be made to increase QoL, especially in physical health in pregnant women.

**Keywords:** Pregnancy, Quality of life, Women



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## Introduction

Pregnancy is one of the most risky and challenging stages of a woman's life. In fact, there are several stages in every woman's life that have profound effects on her life (1). Pregnancy in women involves many extensive biochemical, physiological, and anatomical changes that are beyond the control of women and expose them to harm (2). For example, these changes during pregnancy include complications such as nausea, vomiting, fatigue, back pain, back and groin pain, leg varicose veins, edema, increased vaginal discharge, constipation, hemorrhoids, dizziness, weakness, increased saliva, and stomach burning (3,4). The physical and social functioning of a pregnant woman decreases as a measure of quality of life (QoL) during normal pregnancy (1). It has been proven that in uncomplicated pregnancies, these changes can affect the QoL of pregnant women, thus affecting pregnancy outcomes, the postpartum period, and baby growth (5). The importance of QoL in health issues is recognized as a principle and basis (6). The World Health Organization (WHO) defines QoL as people's perceptions

of their cultural aspects, their goals, and their desires (7). In general, the results of the conducted studies indicate that the QoL in pregnant women has the lowest level in the physical dimension and the highest level in the psychological and vital dimensions. For example, the score of functional limitations due to physical health and vitality problems in the study of Abbaszadeh et al was reported as the lowest dimension of QoL (8). Furthermore, the score of mental and physical subscales in the study of Azizi et al has been reported as the lowest dimension of QoL (9). In the study by Jouybari et al, a small number of women under study had good QoL (10). In a study by Saridi et al, 91% of the women declared that their QoL was good/very good (11). Additionally, a study by Ramírez-Vélez detected higher QoL scores in the vitality domain, followed by mental health and general health. Moreover, the lowest score was demonstrated in the domains of the emotional role and physical role (12). Further, in a study by Soyemi et al, higher QoL scores were found in the social relationship domain and environmental domain, and the lowest score was demonstrated in the domains



of general health (13). Several factors such as age, level of education, marital status, existence or absence of children, employment, family income, history of the disease, or other family members can affect health and QoL (14). Given that changes in pregnancy can have an impact on women's QoL, assessing the QoL of pregnant women can provide important information to healthcare providers for effective treatment interventions and help improve the QoL of pregnant women (15). Accordingly, considering that no study has been done in Neyshabur in this regard, this study aimed to assess QoL and its related factors in pregnant women referring to health centers in Neyshabur in 2022. The results of this study can provide a basis for identifying the amount of QoL and related factors and subsequently help to design appropriate interventions to improve the QoL of pregnant women and the health of their children.

### Materials and Methods

This cross-sectional study was performed on 417 pregnant women referring to Neyshabur health centers in 2021 for receiving prenatal care. The sampling method was stratified random sampling. Neyshabur has eight health centers, and there are two health centers in each geographical region of the city (north, south, east, and west), so one center is randomly selected from each region. Then, pregnant women who referred for pregnancy care were randomly selected from each center. Inclusion criteria in this study were having a health file, confirmed pregnancy, literacy (ability to read and write), and not having a high-risk pregnancy. Further, exclusion criteria in this study included written dissatisfaction to participate. The researchers visited the health centers, met the pregnant women who came for pregnancy care, and distributed the questionnaires among them. After explaining the objectives of the study, the emphasis was on keeping the received information confidential and obtaining informed written consent to collect information through the self-reporting method.

### Measures

The data collection tool consisted of two parts: demographic characteristics and QoL. Demographic characteristics contained information such as participant's age, gestational age, number of pregnancies, sex of the fetus, education level, husband's level of education, employment status, Wealth Index, history of abortion, unwanted pregnancy, and quality of sleep. To calculate the Wealth Index as a composite measurement of a pregnant woman's cumulative living standard, easy-to-collect data on a pregnant women's ownership of assets and principal component analysis were used. The 12-item Short Form (SF-12) QoL questionnaire has eight subscales: a general understanding of one's health, physical function, physical health, emotional problems, physical pain, social functioning, vital energy, and mental health. To score this questionnaire, the number in front of each option

indicates the score of that option. For example, in question 4, the yes option gets a score of 1, and the no option gets a score of 2. Questions 1, 8, 10, and 11 are scored in reverse. For example, a score of 5 in the phrase number 1 becomes 1 and a score of 1 in the same question becomes a score of 5. QoL points from 12 to 24 points are weak, 25 to 36 points are moderate, and 37 to 48 points are good, so a high score indicates a higher QoL. The reliability of this scale was calculated by retesting method. The calculated Cronbach's alpha for 12 questions of physical dimension and 12 questions of psychological dimension was 0.89 and 0.76, respectively, indicating the desired reliability of the questions of this questionnaire (16). Montazeri et al also examined the validity and reliability of this scale in Iran. They used the retest method to check the reliability. The reliability of 12 questions of physical and psychological components was reported to be 0.73 and 0.72, respectively. Furthermore, the validity was assessed using known group comparison and convergent validity. The correlations between the SF-12 scales and single items suggested that the physical functioning, physical health, bodily pain, and general health subscales were more correlated with the physical component summary-12 score, while the vitality, social functioning, emotional problems, and mental health subscales were more correlated with the mental component summary-12 score, lending support to its good convergent validity (17).

### Analysis

After collecting the data, the information was cleaned. Descriptive statistics (mean, standard deviation, and absolute and relative frequency distribution table) and ordinal regression were used to analyze the data. The software used for data analysis was SPSS software version 22, and the significance level was considered 0.05.

### Results

The characteristics of the total sample are highlighted in Table 1. The mean  $\pm$  standard deviation of pregnant women was  $28.36 \pm 5.96$  years old. The gestational age of most pregnant women (44.60%) was more than 27 weeks. Moreover, the majority of participants (63.07%) had less than three pregnancies in the past, and 29.74% of women had abortions in the past. The education level of many pregnant women (43.65%) was a diploma. In terms of the welfare index variable, the majority of participants (20.14%) were poor, and half of the participants (49.16%) had poor sleep quality.

According to aspects of QoL results, the lowest mean was for physical health ( $14.65 \pm 2.87$ ), and the highest mean was for mental health ( $20.95 \pm 3.71$ ). Moreover, most participants 49.16% had moderate, 47% good, and 3.84 % bad QoL.

Table 2 shows that employment (Adjusted odds ratio [AOR] = 2.34, 95% confidence interval [CI]: 1.03-5.30) and good quality of sleep (AOR = 4.85, 95% CI: 2.99-7.01) were statistically significant variables in relation to QoL.

**Table 1.** Demographic Characteristics of Pregnant Women (N=417)

Variables	Category	No. (%)
Age (y)	<18	7 (1.68)
	18-25	140 (33.57)
	26-35	211 (50.60)
	>35	59 (14.15)
Gestational age (wk)	<9	38 (9.11)
	9-17	81 (19.42)
	18-27	112 (26.86)
	>27	186 (44.60)
Number of pregnancies	<3	(63.07) 263
	3-5	(35.25) 147
	>5	7 (1.68)
Sex of the fetus	Male	169 (53.31)
	Female	148 (46.69)
Abortion	Yes	124 (29.74)
	No	293 (70.26)
Education level	>Diploma	132 (31.65)
	Diploma	182 (43.65)
	≥Bachelor's degree	103 (24.70)
Husband's education level	>Diploma	128 (30.69)
	Diploma	195 (46.76)
	≥Bachelor's degree	94 (22.54)
Employment status	Employed	36 (8.63)
	Housewife	381 (91.37)
Unwanted pregnancy	Yes	102 (24.46)
	No	315 (75.54)
Wealth index	Poorest	83 (19.90)
	Poor	84 (20.14)
	Mediate	83 (19.90)
	Rich	84 (20.14)
	Richest	83 (19.90)
Sleep quality	Poor	205 (49.16)
	Good	212 (50.84)

Pregnant women who were employed were 2.34 times more likely to have good QoL compared to those who were housewives ( $P < 0.05$ ). In addition, pregnant women who had good sleep quality were 4.58 times more likely to have good QoL compared to those who had low sleep quality ( $P < 0.001$ ).

## Discussion

The objective of this study was to assess QoL and its related factors in pregnant women referring to health centers. This study indicated that 49.16% of pregnant women had mediate level of QoL. In a study conducted by Abolfathi et al (18), the results of the study showed that half of the pregnant women had a moderate QoL, which was aligned with the result of present study. In the study conducted by Saridi et al (11), 91 % of pregnant women had good and very good QoL, and in the study conducted

**Table 2.** Ordinal Regression (QoL indicators) (N=417)

Variables	Univariate OR (95% CI)	Full Model AOR (95% CI)
Age, years <sup>a</sup>		
<18 years <sup>b</sup>	1	1
18-25 years	0.81(0.18-3.65)	0.30(0.06-1.58)
26-35 years	0.57(0.13-2.56)	0.30(0.06-1.56)
>35 years	0.50(0.11-2.35)	0.25(0.04-1.36)
Pregnancy age (wk) <sup>a</sup>		
<9 <sup>b</sup>	1	1
9-17	0.75(0.35-1.59)	0.99(0.44-2.25)
18-27	1.29(0.62-2.67)	2.03(0.91-4.54)
>27	0.72(0.36-1.43)	1.09(0.52-2.31)
Number of pregnancies <sup>a</sup>		
<3 <sup>b</sup>	1	1
3-5	0.72(0.48-1.07)	0.93(0.52-1.63)
>5	0.32(0.07-1.59)	0.33(0.06-1.75)
Abortion history <sup>a</sup>		
No <sup>b</sup>	1	1
Yes	0.74(0.49-1.12)	0.71(0.42-1.21)
Education level <sup>a</sup>		
Less than diploma <sup>b</sup>	1	1
Diploma	1.29(0.83-2.01)	1.27(0.77-2.11)
Bachelor's degree and higher	1.09(0.66-1.81)	0.84(0.44-1.58)
Husband's education level <sup>a</sup>		
Less than diploma <sup>b</sup>	1	-
Diploma	1.09(0.70-1.69)	-
Bachelor's degree and higher	1.33(0.79-2.25)	-
Job <sup>a</sup>		
Housewife <sup>b</sup>	1	1
Employment	1.72(0.87-3.41)	2.34(1.03-5.30)*
Unwilling pregnancy <sup>a</sup>		
No <sup>b</sup>	1	1
Yes	0.65(0.41-1.01)	0.69(0.42-1.13)
Wealth index <sup>a</sup>		
Poorest <sup>b</sup>	1	1
Poor	1.06(0.58-1.94)	0.97(0.50-1.87)
Medium	1.39(0.76-2.55)	1.25(0.64-2.45)
Rich	1.55(0.85-2.84)	1.58(0.79-3.15)
Richest	0.90(0.49-1.64)	0.93(0.47-1.85)
Sex of the fetus <sup>a</sup>		
Male <sup>b</sup>	1	-
Female	0.67(0.43-1.03)	-
Sleep quality <sup>a</sup>		
Weak <sup>b</sup>	1	1
Good	4.31(2.87-6.45)***	4.58(2.99-7.01)***

Note. QoL: Quality of life; CI: Confidence interval; AOR: Adjusted odds ratio. Full Model: Multiple linear regression was conducted after adjusting variables which were  $P < 0.25$  in the univariate regression (Adjusting for age, pregnancy age, number of pregnancies, abortion history, education level, job, unwanted pregnancy, wealth index, and sleep quality). <sup>a</sup> Categorical variable. <sup>b</sup> Reference group. Significance levels: \*\*\*  $P < 0.001$ , \*\*  $P < 0.01$ , \*  $P < 0.05$ .

by Bahadoran and Mohamadirizi (19), 43% had a good QoL that is inconsistent with the results of the present study. Generally, it seems that during pregnancy due to the complications of pregnancy and physical restrictions, the QoL is affected and consequently reduced in pregnant women. In this study, physical health was lower than mental health. This can be justified due to the conditions of pregnancy and physical restrictions because the woman experiences a decrease in physical activity due to weight gain and physical complications that can cause pregnancy. Consistent with the results of the present study, in a study by Daglar et al (20), the lowest QoL was reported for physical health. In addition, the present study found a relationship between the QoL and employment, so the QoL of those pregnant women who had a job was twice as high as that of housewives. In this regard, the results of various studies (7,18,21,22) reported a correlation between the job and the QoL, which is in line with the result of the present study. It can be noted that jobs are one of the most important sources of human identity, and quantity and QoL can affect the role of the individual. Moreover, since health is one of the most important dimensions of QoL, it can be concluded that the job has a direct impact on the QoL. The results of this study showed pregnant women who had a good quality of sleep have good QoL. The lack of sleep during the day causes drowsiness and can increase social problems. In this regard, reducing sleep quality and sleep disorders during pregnancy leads to an increased risk of premature birth at birth (23). In line with the result of the present study, various studies have demonstrated the impact of sleep quality on pregnant women's QoL and the positive relationship between these two variables. Likewise, in a study by Saadati et al (24), the results showed a significant relationship between QoL and sleep quality. In Rezaei and colleagues' study (25), sleep quality was low in pregnant women with sleep disorders. The results of Lagadec and colleagues' study (5) revealed that sleep difficulties are one of the main factors associated with poorer QoL. Similarly, the results of Effati-Daryani et al (26) indicated significant correlations between QoL and total score of sleep quality. Moreover, Sut et al (27) found that only pregnancy status was related to Pittsburgh Sleep Quality Index scores. The current study faced several limitations. First, regarding the difficult and serious conditions of the pregnant women and their disability to respond questions, a number of the questionnaires were completed by their accompaniments (relatives). Second, due to the nature of the study design, the association between the QoL and its factors may not be reliable. Since this study was a cross-sectional one and it just considered the association between the variables, future studies can be conducted to discover and confirm the association between QoL and different factors.

### Conclusion

According to the results of this study, QoL among women pregnant was moderate, and physical health had a low

score. We observed that among mentioned factors, sleep quality and employment had an association with QoL. Therefore, according to moderate QoL in pregnant women, it is recommended that interventions be made to increase QoL, especially regarding physical health in pregnant women.

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### Authors' Contribution

**Conceptualization:** Hamid Abasi.

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**Formal analysis:** Fatemeh Khorashadizadeh.

**Funding acquisition:** Hamid Abasi.

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**Project administration:** Hamid Abasi.

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**Writing – original draft:** Hamid Abasi, Fatemeh Khorashadizadeh.

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### Competing Interests

The authors declare no conflict of interests.

### Ethical Approval

This study was approved by the Neyshabur University of Medical Sciences (with the ethics code of IR.NUMS.REC.1400.027).

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