

Predictors of Maternal Quality of Life During Pregnancy

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ABSTRACT

Background: Pregnancy is a critical phase associated with significant physiological and psychosocial changes that can influence a woman's quality of life (QoL). Assessing QoL during pregnancy is essential for improving maternal and fetal outcomes.

Objectives: To assess the quality of life among pregnant women and identify factors associated with it.

Methods: A cross-sectional descriptive study was conducted among 110 antenatal women attending the outpatient department of SRM Medical College Hospital. QoL was assessed using the validated QOL-GRAV questionnaire. Sociodemographic and obstetric data were collected, and statistical analysis was performed using SPSS, with $p < 0.05$ considered significant.

Results: Most participants were aged 26–35 years, predominantly housewives, and from rural areas. Education, occupation, income, marital status, and trimester showed significant associations with QoL. However, regression analysis identified education ($p=0.006$) and trimester ($p=0.013$) as significant predictors. Higher education was associated with better QoL, while advancing trimester showed a negative impact.

Conclusion: Maternal quality of life during pregnancy is influenced by multiple factors, with education and trimester emerging as key predictors. Targeted interventions focusing on maternal education and trimester-specific care may help improve overall well-being during pregnancy.

KEYWORDS Quality of Life, Pregnancy, QOL-GRAV, Maternal Health, Antenatal Care, Predictors, Sociodemographic Factors, Trimester, Education.

INTRODUCTION:

Although pregnancy is a physiological phenomenon, it represents a critical phase in a woman's life that requires significant biological and psychosocial adjustment to new circumstances. This period can have both positive and negative influences on a woman's overall experience. Quality of life (QoL), which reflects the interaction of social, health, economic, and environmental factors, plays a crucial role in determining general well-being and life satisfaction. Assessing QoL during pregnancy is particularly important due to the multitude of physical, hormonal, emotional, and psychological changes that occur. [1,2]

Reduced QoL in pregnant women has been associated with several adverse maternal outcomes, including excessive gestational weight gain, body dissatisfaction, fatigue, back and pelvic pain, stress, anxiety, and depression, as well as poorer postnatal well-being. Moreover, compromised maternal QoL may also negatively impact the child, contributing to low birth weight, impaired mother–infant bonding, and suboptimal psychological, social, emotional, and cognitive development. Thus, QoL during pregnancy has implications for both short-term and long-term public health outcomes. [3,4]

Pregnancy and the transition to parenthood are remarkable experiences that bring both fulfillment and apprehension about future responsibilities. During this time, women undergo physiological, biochemical, and anatomical changes that may predispose them to stress, anxiety, and emotional disturbances. These changes, along with the need to adapt to new maternal roles and responsibilities, can affect body image and overall life satisfaction. Despite advancements in reproductive rights and healthcare policies, antenatal care often remains predominantly medicalized, with limited attention given to non-clinical aspects such as mental health, self-esteem, confidence, and QoL. Therefore, evaluating these dimensions alongside routine clinical care is essential for comprehensive maternal health promotion. [5,6]

The quality of life of pregnant women is influenced by multiple factors, including social support, acceptance of pregnancy, family dynamics, perception of maternal roles, and preparedness for childbirth. Although these changes are temporary, they can significantly affect a woman's well-being during gestation. The World Health Organization defines QoL as an individual's perception of their position in life within their cultural and value systems, in relation to their goals, expectations, and concerns. Hence, QoL encompasses physical health, psychological state, social relationships, and environmental context, all of which should be considered in maternal healthcare. [7,8]

In research and clinical practice, QoL is commonly assessed using generic or disease-specific tools; however, there is a lack of pregnancy-specific instruments. While tools like WHOQOL-BREF are widely used, they may not fully capture pregnancy-related experiences. The Quality of Life–Gravidity (QOL-GRAV) questionnaire is one of the few specialized instruments designed to sensitively assess QoL during physiological pregnancy.[9,10] Given the limited literature exploring the relationship between pregnancy and QoL, this study utilized the QOL-GRAV tool to better understand factors influencing the health-related quality of life among pregnant women.

METHODS:

Study Design

This was a cross-sectional descriptive study conducted to assess the quality of life among pregnant women.

Study Setting

The study was conducted at SRM Medical College Hospital and Research Centre, involving antenatal patients attending the outpatient department (OPD).

Study Duration

The study was carried out over a period of two years, from March 2024 to March 2026.

Study Population

The study population comprised antenatal women attending routine antenatal check-ups at the OPD of SRM Medical College Hospital.

Sample Size Calculation

The sample size was calculated using the formula:

$$n > [Z_{1-\alpha/2} \times \sigma / d]^2$$

With $\alpha = 0.01$, standard deviation (σ) = 19.85, and allowable error (d) = 4.89, the minimum sample size required was 110 participants.

Inclusion Criteria

- Pregnant women attending antenatal OPD
- Age >18 years
- Physiological pregnancy
- Women in the third trimester

Exclusion Criteria

- Presence of obstetric complications in the current pregnancy
- Any disabling chronic illness

Ethical Considerations and Informed Consent

Prior to enrollment, written informed consent was obtained from all participants. Participants were informed about the purpose of the study, confidentiality of data, and their right to withdraw at any time without affecting their medical care.

Clinical Evaluation

Baseline demographic details were collected from all participants. Assessment of quality of life was performed using the validated Quality of Life–Gravidity (QOL-GRAV) questionnaire.

Procedure

Eligible antenatal women attending the OPD were enrolled after obtaining consent. Participants were provided with the QOL-GRAV questionnaire, a 9-item tool based on a 5-point Likert scale. The questionnaire was explained prior to administration. Scores ranged from 9 to 45, with lower scores indicating better quality of life.

Outcome Measures

- Primary outcome: Quality of life score during pregnancy
- Secondary outcome: Identification of factors influencing quality of life

Statistical Analysis

Data were coded and entered into Microsoft Excel and analyzed using SPSS software. Statistical analysis was performed to determine correlations between quality of life and antenatal variables. A p-value of <0.05 was considered statistically significant.

RESULTS:

Demographic Characteristics

Most participants were aged 26–35 years (59.8%) and predominantly housewives (75.9%) with no personal income (75.9%). Nearly all were married (98.8%) and from rural areas (91.3%). Most women were in the second

trimester (60.3%) and had 1–2 children (59.1%). Educational status was fairly distributed, with a slight predominance of higher education. Husbands were mostly privately employed (48.1%) and had relatively higher educational levels.

Table 1: Demographic Characteristics

Characteristics	Frequency	Percentage
Age		
15–25	32	28.8
26–35	66	59.8
36–45	12	11.4
Education		
Illiterate	25	22.3
Metric	19	17.6
Intermediate	23	20.8
Graduation	19	17.6
Post-graduation	24	21.5
Occupation		
Housewife	84	75.9
Working women	26	24.1
Income (Pk. Rs.)		
None	84	75.9
<10,000	8	7.4
11,000–20,000	8	7.7
>20,000	10	8.9
Marital Status		
Widowed	1	1.2
Married	109	98.8
Locality		
Urban	10	8.7
Rural	100	91.3
Trimester		
1	25	22.8
2	66	60.3
3	19	16.8
Number of Children		
0	2	1.8
1–2	65	59.1
3–4	37	33.6
>4	6	5.5
Husband's Education Level		
Illiterate	22	19.6
Metric	14	12.7
Intermediate	21	19.4
Graduation	25	22.3
Post-graduation	28	26.0
Husband's Occupation		
Government employee	30	27.5
Private employee	53	48.1
Business/other	27	24.4

Patients' Demographic Characteristics and Quality of Life

Education also showed a significant association ($p=0.002$), with better quality of life observed among women with higher education levels.

Occupation and income were significantly associated ($p=0.014$ and $p=0.005$, respectively), with housewives and those without income more likely to report good quality of life.

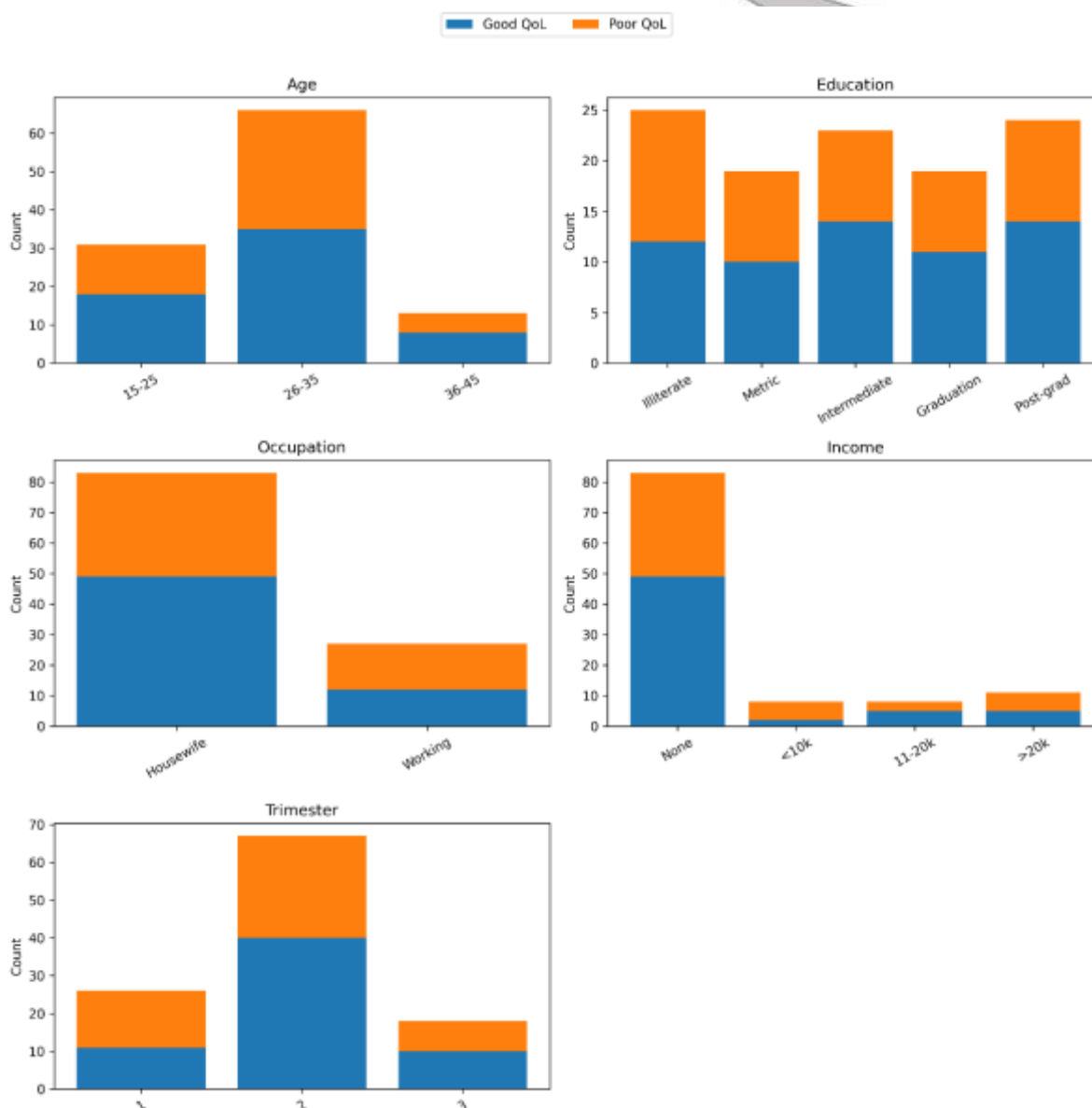
Marital status showed significance ($p=0.017$), though most participants were married. Trimester was also significantly associated ($p=0.014$), with better quality of life more common in the second trimester.

However, locality, number of children, husband's education, and husband's occupation did not show statistically significant associations with quality of life.

Table 2: Patients' Demographic Characteristics and Quality of Life (n = 110)

Characteristics	QoL Good n (%)	QoL Poor n (%)	P-value
Age			0.004
15–25	18 (29.9)	13 (27.4)	
26–35	35 (57.6)	31 (62.6)	
36–45	8 (12.5)	5 (10.1)	
Education			0.002
Illiterate	12 (19.6)	13 (25.7)	
Metric	10 (16.5)	9 (19.0)	
Intermediate	14 (22.8)	9 (18.4)	
Graduation	11 (18.8)	8 (16.2)	
Post-graduation	14 (22.3)	10 (20.7)	
Occupation			0.014
Housewife	49 (80.4)	34 (70.4)	
Working women	12 (19.6)	15 (29.6)	
Income			0.005
None	49 (79.5)	34 (69.3)	
<10,000	2 (3.6)	6 (12.3)	
11,000–20,000	5 (8.5)	3 (6.7)	
>20,000	5 (8.5)	6 (11.7)	
Marital Status			0.017
Widowed	0 (0)	1 (2.8)	
Married	61 (100)	48 (97.2)	
Locality			0.496
Urban	5 (8.9)	4 (8.4)	
Rural	56 (91.1)	45 (91.6)	
Trimester			0.014
1	11 (17.4)	15 (29.6)	
2	40 (65.2)	27 (54.2)	
3	10 (17.4)	8 (16.2)	
Number of Children			
0	1 (2.2)	1 (2.8)	0.41
1–2	40 (34.8)	25 (36.9)	
3–4	24 (36.2)	13 (27.4)	
>4	4 (26.8)	2 (33.0)	
Husband's Education			0.262
Illiterate	12 (19.2)	10 (20.1)	
Metric	7 (10.7)	7 (15.1)	
Intermediate	12 (19.6)	9 (19.0)	
Graduation	26 (43.3)	18 (37.4)	
Post-graduation	4 (7.1)	4 (8.3)	
Husband's Occupation			0.385
Government employee	15 (25.3)	15 (30.7)	
Private employee	30 (49.3)	23 (46.4)	
Business	16 (25.3)	11 (22.3)	

Figure 1: Association of Demographic Variables with Quality of Life among Pregnant Women



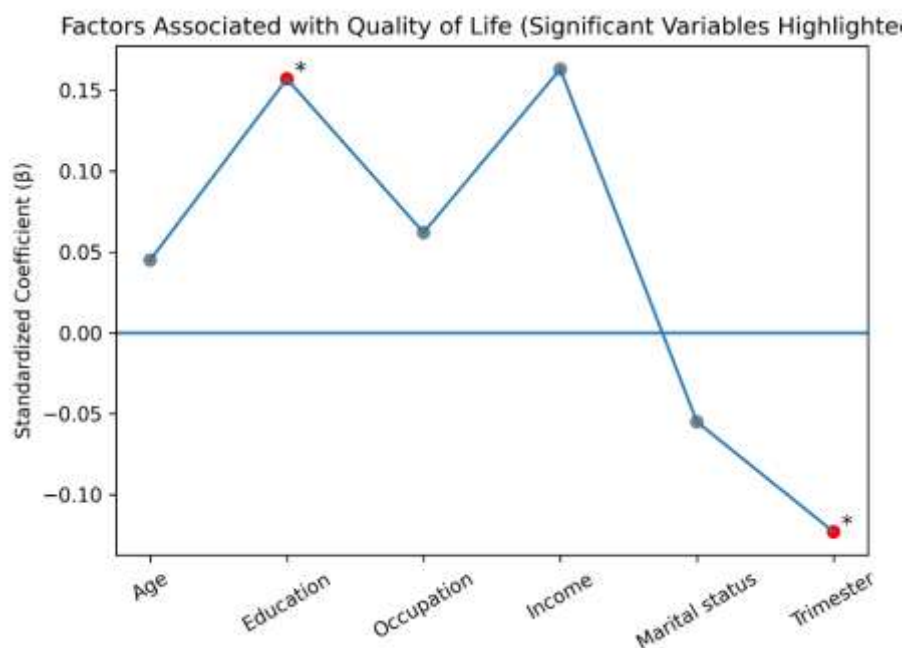
Factors Associated with Quality of Life among Pregnant Women

Education and trimester were found to be statistically significant predictors of quality of life ($p < 0.05$). Higher education was associated with better quality of life, while advancing trimester showed a negative association. Other variables such as age, occupation, income, and marital status were not significantly associated with quality of life.

Table 3: Factors Associated with Quality of Life among Pregnant Women

Model	Standardized Coefficients (β)	t-value	Sig. (p-value)	95% Confidence Interval (Lower)	95% Confidence Interval (Upper)
Age	0.045	0.911	0.363	-0.417	1.136
Education	0.157	2.759	0.006	0.906	0.152
Occupation	0.062	0.583	0.560	-1.684	3.106
Income	0.163	1.454	0.147	-0.280	1.869
Marital status	-0.055	-1.112	0.267	-6.669	1.850
Trimester	-0.123	-2.500	0.013	-1.705	-0.204

Figure 2: Factors Associated with Quality of Life among Pregnant Women (Red points + asterisk (*) → Statistically significant ($p < 0.05$), Grey points → Not significant)



DISCUSSION:

The findings of the present study are largely consistent with previously published literature on quality of life (QoL) among pregnant women. In our study, the majority of participants were aged 26–35 years, predominantly housewives, with no personal income, and mostly from rural areas. Similar demographic patterns have been reported in other studies, where pregnancy populations are often characterized by young to middle reproductive age groups and a higher proportion of non-working women, reflecting sociocultural norms in developing settings (11).

Education emerged as a significant factor influencing QoL in the present study, with higher educational status associated with better quality of life. This finding aligns with multiple studies, which consistently report that educated women tend to have better awareness, coping strategies, and access to healthcare, thereby improving their QoL. For instance, higher education has been identified as a positive predictor of QoL in pregnant women (12). Similarly, other studies have shown that lower education is associated with poorer physical and mental health outcomes in the maternal period (13).

Occupation and income showed significant associations with QoL in the present study; however, they were not independent predictors on regression analysis. Interestingly, housewives and women without income reported better QoL, which may be attributed to reduced work-related stress and greater family support. This partially contrasts with some studies where employment and higher socioeconomic status were associated with improved QoL due to financial independence and better access to resources (14). These differences could be explained by sociocultural variations, where family support systems in certain populations may buffer the effects of low income.

Trimester was another significant factor, with better QoL observed during the second trimester and a negative association with advancing gestational age. This finding is strongly supported by existing literature, which indicates that QoL tends to decline in later stages of pregnancy due to increasing physical discomfort, fatigue, and psychological stress (15). Moreover, trimester has been identified as a negative predictor of QoL in regression analyses, reinforcing the progressive impact of physiological changes during pregnancy (12).

Marital status showed a statistically significant association in this study, although the majority of participants were married. Previous studies highlight the importance of partner and social support in improving QoL, suggesting that stable marital relationships contribute positively to maternal well-being (16). However, in multivariate analysis, marital status did not remain a significant predictor, indicating that its effect may be mediated through other factors such as social support and economic stability.

No significant association was found with locality, number of children, husband's education, or husband's occupation. This is consistent with some studies where these variables showed limited direct influence on QoL when compared to stronger predictors like education, social support, and gestational factors (14).

Overall, the present study reinforces the multifactorial nature of quality of life during pregnancy. Consistent with previous research, education and trimester emerged as key predictors, while other sociodemographic variables showed variable associations. These findings highlight the need for targeted interventions focusing on maternal education and trimester-specific care to improve quality of life during pregnancy.

CONCLUSION:

The present study highlights that quality of life among pregnant women is influenced by various sociodemographic and obstetric factors. Education and trimester were identified as significant predictors, with higher education improving quality of life and advancing gestational age having a negative impact. Although factors such as occupation, income, and marital status showed significant associations, they did not independently predict QoL. These findings emphasize the need for comprehensive antenatal care that extends beyond clinical management to include educational, psychological, and social support interventions. Improving maternal awareness and providing trimester-specific care strategies can play a vital role in enhancing the overall quality of life and promoting better maternal and fetal outcomes.

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