Research Article

Quality of Life among High-Risk Antenatal Women in a Tertiary Care Hospital Kerala, South India

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Abstract

Objective: to assess the quality of life (QoL) among high-risk antenatal women and to determine its association with selected baseline and obstetric variables.

Methods: A cross-sectional design was utilized, and 82 high-risk antenatal women meeting the inclusion criteria were purposively sampled from the antenatal outpatient department of a tertiary care hospital in Kerala, South India. Data collection involved a structured questionnaire to evaluate baseline, obstetric factors, and the QOL/GRAV Questionnaire to measure QoL. Data were analysed using SPSS version 23. Categorical variables were summarized as frequencies and percentages. The association between selected variables and quality of life (QoL) was assessed using Fisher's Exact test, and regression analysis was performed to identify predictors of low QoL.

Results: The mean QoL scores of the respondents in the current study were 30.43 ± 4.461, which suggests a good QoL despite potential pregnancy-related challenges. The presence of leg cramps, anaemia, and multiple pregnancies among high-risk antenatal women was significantly associated with reduced QoL.

Conclusion: The findings provide insights into the QoL in high-risk antenatal populations, emphasizing the need for tailored interventions to improve maternal health outcomes.

Keywords: antenatal women, high risk, quality of life.

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INTRODUCTION

During pregnancy, women often experience different levels of concern for their own health and that of their unborn child. During this time, their bodies undergo substantial biochemical, physiological, and anatomical changes, which can affect their overall quality of life. (QoL).[1] Motherhood requires women to adapt to the profound changes that occur during pregnancy, many of which are beyond their control.[2] In cases of high-risk pregnancy, these changes can significantly impact a woman's QoL. High-risk pregnancies are particularly concerning due to the increased likelihood of adverse outcomes for both the mother and the foetus. It is important to note that complications during the current pregnancy, along with pregnancy-related discomforts, can further diminish the QoL of expectant mothers.[3]

Children of mothers who have poor QoL during pregnancy may have social, emotional, and behavioural issues as they grow up. In India, the high prevalence of high-risk pregnancy is a significant concern, potentially contributing to the country's elevated rates of maternal and neonatal morbidity and mortality.[4] A prospective case-control study on the effects of high-risk

pregnancy on prenatal stress levels concluded that prenatal stress is significantly higher in high-risk pregnancy compared to healthy pregnancy.[5]

Higher prenatal stress levels in turn curtail the QoL. Developing nursing interventions to enhance effective coping strategies is crucial for improving the QoL in high-risk pregnant women. By promoting adaptive coping mechanisms and addressing maladaptive ones, these interventions can lead to better maternal and foetal outcomes, ultimately enhancing the overall well-being of high-risk expectant mothers.

METHODS

The research utilized a quantitative approach with a cross-sectional design. The study was conducted in the antenatal outpatient department of tertiary care hospital, Kerala, South India between September and November 2024. A sample of 82 high-risk antenatal women was selected. The sample size was calculated based on a reported prevalence of anxiety and depression of 31%, with a 5% level of significance and an absolute precision of 10%.[6] Purposive sampling was employed to recruit antenatal women classified as high-risk based on established obstetric or medical criteria. This approach was appropriate for the cross-sectional design, as it allowed for the intentional inclusion of participants who could provide relevant and meaningful data for the study objectives. The study included antenatal women aged 19 years and above, identified with one or more medical or obstetric conditions during the current pregnancy that could negatively affect maternal or foetal outcomes, who were attending the antenatal clinic at the time of data collection and were literate in English or Malayalam. Women with confirmed psychiatric diagnoses were excluded from the study. Ethical clearance obtained on 14.08.2024 (Ref:No: 30/EC/24/ AIMS-10). Participants and their attendants were assured of confidentiality and were fully informed about the purpose of the study, their rights to voluntary participation, and their freedom to withdraw at any time without any impact on their access to institutional healthcare services. Written informed consent was subsequently obtained from each participant.

The tools used for data collection included a structured questionnaire to gather baseline information such as age (in years), educational status, occupational status, economic status, and place of residence. Obstetric variables such as gestational age, gravida, number of children, minor discomforts during pregnancy, high-risk complications, and haemoglobin levels were also assessed. The QoL was evaluated using the QOL/ GRAV Questionnaire, adhering to the guidelines provided by its developers. Malayalam translation of the tool was verified and its dependability was further evaluated. With a Cronbach's alpha score of 0.79, the questionnaire is a reliable and consistent method for assessing pregnant women's QoL.

The data is recorded in an Excel worksheet and analysed using SPSS 23. Results on categorical measurements are presented in number percentage. Significance is assessed at 5% level. The association between baseline and obstetric variables with QoL is analysed using Fisher Exact test. Regression analysis was employed to determine significant predictor of low QoL.

RESULTS

Table 1. The Description of Baseline and Frequency Distribution of the Participants

Characteristics	Frequency	%
Baseline variables		
Age in years		
21-25	23	28.1
26-30	38	46.3
31-35	16	19.5
36-40	05	6.1
Educational status		
Primary	01	1.2
Secondary	01	1.2
Higher secondary	13	15.9
Degree	43	52.4
PG and above	24	29.3
Occupational status		
Professional	38	46.3
Skilled worker	05	06.1
Home maker	39	47.6
Economic status		
BPL	35	42.7
APL	47	57.3
Residence		
Urban	35	42.7
Rural	47	57.3

As shown in Table 1, most high-risk antenatal women in the study were young adults with higher educational attainment. The majority were homemakers from Above Poverty Line (APL) households residing in rural areas. This profile reflects a relatively stable socioeconomic background among the participants, which may influence their perceived QoL during pregnancy.

The QOL-GRAV is a 9-item survey aimed at evaluating QoL during pregnancy. It uses a 5-point Likert scale for scoring, where 1 represents the highest quality of life and 5 the lowest. Items 7, 8, and 9 are reverse-scored. Based on the developers' criteria, QoL is classified as follows: excellent (mean score of 9–18), very good (19–27), good (28–36), and not very good (37–45).[7] This scoring indicates that higher QoL scores reflect poorer quality of life.

The findings indicate that the majority of participants reported a "Good" level of quality of life, with 53 individuals (64.6%) falling into this category. Additionally, 23 participants (28.0%) rated their quality of life as "Very good," reflecting a notably positive perception among nearly one-third of the respondents. In contrast, only 6 participants (7.3%) described their quality of life as "Not very good," representing a small proportion of the study population with lower perceived well-being. This finding indicates that most of the high-risk antenatal women reported a good QoL, while none perceived their QoL as excellent.

Table 2. QoL of the Study Respondents According to QOL/GRAV Questionnaire

Questionnaire	Always (%)	Often (%)	Sometimes (%)	Rarely (%)	Never (%)
To what extent do you feel that your physical changes associated with this pregnancy do not allow you to do what you need?	11 (13.4)	17 (20.7)	31 (37.8)	20 (24.4)	3 (3.7)
To what extent do you feel that your psychological changes associated with this pregnancy do not allow you to do what you need?	15 (18.3)	18 (22)	28 (34.1)	18 (22)	3 (3.7)
How worried are you about able to handle household chores?	15 (18.3)	17 (20.7)	26 (31.7)	22 (26.8)	2 (2.4)
How worried are you about carrying out the pregnancy successfully?	9 (11)	21 (25.6)	20 (24.4)	22 (26.8)	10 (12.2)
How worried are you about not being able to handle labour and delivery?	22 (26.8)	15 (18.3)	25 (30.5)	19 (23.2)	1 (1.2)
Have you been forced to cut down your physical activity during this pregnancy?	14 (17.1)	12 (14.6)	24 (29.3)	27 (32.9)	5 (6.1)
How satisfied are you with your partner now?				6 (7.3)	76 (92.7)
How satisfied are you with your social life now?		4 (4.9)	10 (12.2)	14 (17.1)	54 (65.9)
How satisfied are you with how you manage to adapt to this pregnancy?		3 (3.7)	15 (18.3)	24 (29.3)	40 (48.8)

Table 2 demonstrated a mean QoL score of 30.43 ± 4.46, indicating that most high-risk antenatal women in the study maintained a good QoL despite potential pregnancy-related challenges

Table 3. Analysis between QoL with Obstetric Variables

Characteristics	Quality of life			
	Not very good	Good	Very good	*P-value*
Obstetric variables				
Trimester				
First	0	2	1	
Second	0	4	3	0.699
Third	6	47	19	
Gravida				
Primi gravida	3	25	12	
Multigravida	3	28	11	0.565
Number of children				
0	3	25	12	
1	1	22	10	
2	1	06	1	0.261
3	1	0	0	
Minor discomforts				
Vomiting	2	8	5	0.515
Fatigue	2	7	2	0.359
Back pain	2	23	6	0.597
Heart burn	3	16	6	0.546
Ankle oedema	1	8	4	0.968
Leg cramps	3	4	3	0.042
Number of minor discomforts				
1	1	14	9	
2	3	17	4	
3	2	4	3	0.322
4	0	2	0	
Hemoglobin				
Anemic	1	20	2	0.008
Non-anaemic	5	33	21	

Table 3 reveals that the QoL among high-risk antenatal women was lower in those who experienced leg cramps and had low haemoglobin levels.

Table 3. Analysis between QoL with Obstetric Variables

Characteristics	Quality of life			
	Not very good	Good	Very good	*P-value*
High risk complications				
Gestational diabetes	3	24	13	0.665
Pregnancy induced hypertension	0	9	2	0.251
Anaemia	1	20	2	0.008
Polyhydramnios	0	2	0	0.412
Oligohydramnios	0	1	0	0.644
Placenta Previa	0	2	0	0.571
RH incompatibility	0	0	1	0.276
Urinary tract infection	0	1	0	0.644
Preterm	0	3	0	0.262
Intrauterine growth restriction	0	2	0	0.412
Hypothyroidism	2	12	9	0.334
Multiple pregnancy	2	3	0	0.031
Number of high-risk complications				
1	5	36	21	
2	1	15	2	0.178
3	0	2	0	

Table 4 indicates that high-risk antenatal women with anaemia and multiple pregnancies had significantly lower QoL scores.

The regression analysis identified leg cramps as a statistically significant predictor of low quality of life among high-risk antenatal women. Specifically, women experiencing leg cramps were found to be 5.849 times more likely to report low QoL compared to those without, with a confidence interval of 1.343 to 8.864 and a p-value of 0.023, indicating strong statistical significance. In contrast, haemoglobin levels and multiple pregnancy did not show significant associations with low QoL. Haemoglobin had an odds ratio of 1.200 (CI: 0.370–3.89) and a p-value of 0.761, while multiple pregnancy had an odds ratio of 1.84 (CI: 0.979–12.1) with a p-value of 0.052, which is marginally above the conventional threshold for significance.

DISCUSSION

The study involved a cohort of 82 pregnant women, with the majority (46.3%) being between 26 and 30 years of age, consistent with findings from a similar study conducted in Nepal.[8] The occupational status of participants aligned with data reported from Spain.[9] The majority of women in this study were multigravida, aligning with findings from a study conducted in Puducherry[10] and in their third trimester consistent with the results from Tanzania.[11] Over 30.5% of participants reported experiencing heartburn, a result comparable to findings from Mexico.[12] The incidence of Rh incompatibility was comparable to that reported in rural communities in Karnataka.[13] The prevalence of multiple pregnancies reflected similar findings from a study in Maharashtra.[14]

However, differences were noted in baseline variable compared to a study in Uttar Pradesh, where participants had notably lower educational attainment.[15] In this study, a significant proportion of respondents were residing in rural areas, contrasting with findings from China.[16] The prevalence of Gestational Diabetes Mellitus (GDM) in our study differed significantly from findings in studies conducted in Nagpur and Tamil Nadu, suggesting regional variation in risk factors or healthcare access.[17,18] Similarly, the prevalence of Pregnancy-Induced Hypertension (PIH) varied from the study conducted in Karnataka, which may be attributed to different demographic or socio-economic factors influencing the population.[19] In terms of anaemia, our study showed a prevalence of 28.1%, which diverges from findings in Northern Tanzania and Madhya Pradesh [20,21] but aligns closely with data from Indonesia[22] indicating potential commonalities in environmental or nutritional factors across similar regions.

The present study managed to identify significant association between QoL and obstetric variables. Leg cramps, a minor discomfort was significantly associated with the maternal QoL unlike result from the study conducted in Malaysia.[21] There was significant association between anemia and multiple pregnancy with QoL of antenatal women. Yilmaz et al reported a similar finding of significant association between QoL and maternal anemia in a study carried out in Turkiye.[23] Nonetheless, no substantial correlation was found between other factors and the QoL of pregnant women.

The mean QoL scores of the respondents in the current study were 30.43 ± 4.461, which suggests a good QoL. None of the participants had excellent QoL, 53(64.6%) of them were having good QoL, whereas 7.4% of participant's QoL was not very good. These findings contrast with a cross-sectional analysis conducted in Pakistan, where the mean QoL scores of the participants were 19.85 ± 4.89, indicating a very good QoL.[24]

Leg cramps is a common discomfort in pregnancy that can negatively impact QoL. Frequent or severe cramps disturb sleep, cause fatigue and irritability, and limit mobility, leading to physical and functional restrictions. Nutritional deficiencies or circulatory changes may worsen cramp frequency, while persistent pain and sleep disruption can heighten anxiety and emotional distress, ultimately reducing overall wellbeing among antenatal women.

Despite being at high obstetric risk, many women in the present study reported relatively good QoL. This finding may reflect the benefits of adequate antenatal care, timely management of complications, and consistent monitoring provided by tertiary healthcare services. The results also suggest that psychosocial and environmental factors can buffer the negative effects of medical risk, highlighting the multidimensional nature of QoL during pregnancy. Study findings underscore the importance of sustaining supportive healthcare structures and community-based interventions that promote positive maternal experiences, even among those identified as high-risk.

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CONFLICT OF INTEREST

Researchers declare that there is no conflict of interests in the research.

CONCLUSION

The prevalence of high-risk pregnancy varies across different regions of South India. A study conducted in Karnataka reported that 18.8% of pregnant women were classified as high-risk, among whom 93.8% experienced poor Qol.[13] Similarly, a study from Puducherry found that 18.3% of pregnant women were identified as high-risk.[10] Studies from different districts of Kerala have also shown that the prevalence of high-risk pregnancies ranges from approximately 15.9% to 40%.[25,26] However, there is a paucity of evidence regarding the QoL among high-risk pregnant women in Kerala. This gap underscores the need for region-specific studies to assess the QoL in this vulnerable group and to develop targeted interventions to improve maternal well-being.

Results from a longitudinal cohort study indicated that higher QoL scores were significantly and positively associated with favourable pregnancy outcomes, including ongoing pregnancy and live birth.[27] Enhancing the QoL for high-risk antenatal women necessitates improved identification of their specific needs and challenges. The overall QoL and the specific QoL during pregnancy can differ. The specific QOL-GRAV scale is more attuned to the unique experiences of pregnancy that have a significant impact on a pregnant woman's QoL. Limited research has been conducted on the QoL of antenatal women experiencing various high-risk complications. In this context, the present study yields valuable data regarding those certain high-risk complications such as anaemia and multiple pregnancy that affect the QoL of antenatal women.

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