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Systematic Review

A Systematic Review on Factors Affecting Quality of Life in Pregnant Women

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Abstract:

Background: This systematic review investigates diverse factors influencing the quality of life (QOL) in pregnant women. Focusing on sociodemographic, physical, and psychological aspects, it aims to offer a comprehensive understanding of the multidimensional nature of maternal well-being.

Materials and Methods: A meticulous literature search was done in databases such as EMBASE, PubMed, and WOS, identified studies adhering to explicit inclusion criteria. Keyword selection and search terms were refined collaboratively, ensuring methodological rigor. Study screening involved a two-stage protocol, and data extraction followed a standardized form. Quality assessment employed specific tools tailored to study designs, maintaining robustness.

Results: Synthesizing data from studies utilizing various tools, including WHO QOL BREF, SF-12, and SF-36, revealed the nuanced interplay of factors. Sociodemographic analyses revealed nuanced associations with back pain, pregnancy stage, infertility, and stress. Physical factors, encompassing epigastralgia and esophagogastric reflux, demonstrated significant impacts on overall QOL. Psychological dimensions, including domestic violence and sleep patterns, highlighted intricate connections to maternal well-being.

Conclusion: A holistic approach to maternal care, acknowledging the interconnected influences, is imperative. Tailored interventions, informed by sociodemographic contexts and addressing physical and psychological dimensions, enhance overall maternal well-being.

Keywords: Pregnancy, Quality of Life, Maternal Well-being, Sociodemographic Factors, Systematic Review, Holistic Healthcare.

Introduction

Pregnancy is a transformative and complex period in a woman's life, marked by profound physiological, psychological, and social changes [1-4]. The quality of life during this crucial period plays a pivotal role in shaping not only the well-being of the expectant mother but also the health outcomes for both the mother and the unborn child [5]. As the field of maternal healthcare continues to evolve, there is an increasing recognition of the need to understand the multifaceted factors that influence the quality of life in pregnant women.

This systematic review explores the extensive body of literature surrounding the various factors that impact the quality of life during pregnancy. By synthesizing and analyzing existing research, this review aims to provide a comprehensive overview of the intricate interplay between biological, psychosocial, and environmental determinants of the quality of life in pregnant women. The insights gained from this exploration can contribute significantly to the development of targeted interventions and support systems to enhance the overall well-being of pregnant women.

In recent years, the concept of quality of life has gained prominence in healthcare research, emphasizing the subjective experiences and perceptions of individuals regarding their well-being in different life domains. Pregnancy, as a unique life stage, presents distinct challenges and opportunities for understanding the factors that contribute to or detract from the overall quality of life [6]. Recognizing the significance of this period, researchers and healthcare professionals are increasingly focusing on identifying the key influencers that shape the quality-of-life trajectory during pregnancy [7]. Biological factors, encompassing maternal health, nutritional status, and the presence of medical complications, form a critical aspect of this exploration [8]. The physiological changes that accompany pregnancy

can impact a woman's physical and emotional state, influencing her overall quality of life [9]. Additionally, the interplay between hormonal fluctuations and emotional well-being is an essential facet that warrants careful examination [9].

Psychosocial factors also play a substantial role in shaping the experiences of pregnant women [10]. The societal context, cultural norms, and support systems available to expectant mothers significantly influence their psychological well-being [11]. Understanding the psychosocial dynamics that impact the quality of life during pregnancy is vital for tailoring interventions that address the unique needs of diverse populations [12-14].

Furthermore, environmental factors, including access to healthcare services, socioeconomic status, and geographical location, contribute to the overall well-being of pregnant women [15, 16]. Disparities in healthcare access and social determinants can create variations in the experiences of pregnancy, underscoring the importance of a holistic approach in addressing the factors affecting the quality of life [17, 18].

It is crucial to acknowledge the existing gaps in knowledge and research methodologies within this field. While numerous studies have explored individual aspects of pregnancy and quality of life, a comprehensive synthesis of these findings is imperative to unveil the intricate connections and intersections between various influencing factors. By adopting a systematic approach, this review aims to provide a nuanced understanding of the current state of knowledge and identify avenues for future research.

The exploration of factors affecting the quality of life in pregnant women is a multifaceted endeavor that requires a holistic perspective. This systematic review endeavors to contribute to the existing body of knowledge by synthesizing diverse research findings and shedding light on the interconnected nature of biological, psychosocial, and environmental factors. By doing so, we hope to provide valuable insights that can inform the development of targeted interventions and policies aimed at enhancing the overall well-being of pregnant women, ensuring a positive and empowering experience during this transformative period.

Materials and Methods

Literature Search: Our systematic exploration of the existing literature was comprehensive, spanning multiple databases to ensure a thorough and unbiased representation of relevant studies. Databases such as EMBASE, PubMed, and WOS (Web of Sciences) were meticulously searched. This inclusive approach aimed to mitigate the potential influence of publication bias and encompass a wide spectrum of pertinent research studies.

Keyword Selection and Search Terms: The search terms employed a combination of controlled vocabulary terms (e.g., MeSH terms) and free-text keywords. Primary search terms included "pregnancy," "quality of life," and "factors influencing quality of life in pregnant women." Boolean operators facilitated the connection of these terms, and the strategy was refined through the incorporation of synonyms and related expressions. Collaboration with an experienced medical librarian ensured the heightened sensitivity and specificity of our search strategy.

Criteria for Study Inclusion: To maintain the dependability and credibility of our literature selection process, explicit inclusion and exclusion criteria were established. Studies considered for inclusion had to be published post the year 2011. A preliminary screening or pilot literature review was conducted by two independent researchers, with any disparities resolved by a third reviewer. Thorough scrutiny of each study's title and abstract ensured relevance to the research objectives. Subsequently, the full text of identified papers was obtained and meticulously examined to extract pertinent outcome estimates, upholding a methodologically sound foundation for data collection.

Inclusion Criteria: Our systematic review adhered to explicit inclusion criteria, encompassing original research studies, including randomized controlled trials (RCTs), observational studies (cohort, case-control), and systematic reviews/meta-analyses. Studies selected for inclusion were required to be published in English.

Exclusion Criteria: Studies failing to meet the specified inclusion criteria or exhibiting low methodological quality were excluded. Additionally, case reports, editorials, letters, and animal studies were not considered in our analysis.

Study Screening and Selection Procedure: A two-stage screening protocol guided the study selection process. Independent reviewers evaluated titles and abstracts against predefined criteria, followed by a thorough assessment of full-text articles for potentially suitable studies. Discrepancies were resolved through discussion or consultation with a third reviewer if needed.

Extraction of Data: A standardized data extraction form was employed to systematically gather pertinent information from the selected studies. Extracted data covered study particulars (title, authors, publication year), patient attributes (age, sample size, inclusion/exclusion criteria), and

outcome metrics (factors influencing quality of life in pregnant women).

Assessment Tools for Quality: The quality of included studies underwent rigorous evaluation using specific tools tailored to their designs. The Cochrane Risk of Bias tool was applied to RCTs [19], the Newcastle-Ottawa Scale to cohort and case-control studies [20], and the AMSTAR-2 tool to systematic reviews and meta-analyses [21].

Data Integration: Data synthesis involved creating a narrative summary encompassing study characteristics, outcomes, and findings. This qualitative assessment aimed to provide a comprehensive understanding of the factors influencing the quality of life in pregnant women.

Ethical Considerations: No individual patient data were collected, relying solely on aggregated data from previously published studies. Ethical approval was not deemed necessary for this systematic review as it did not involve direct interaction with human subjects or the initiation of new research.

Reporting Guidelines: This systematic review conformed to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines, ensuring transparent and comprehensive reporting [22]. Figure 1 illustrates the studies included for analysis.

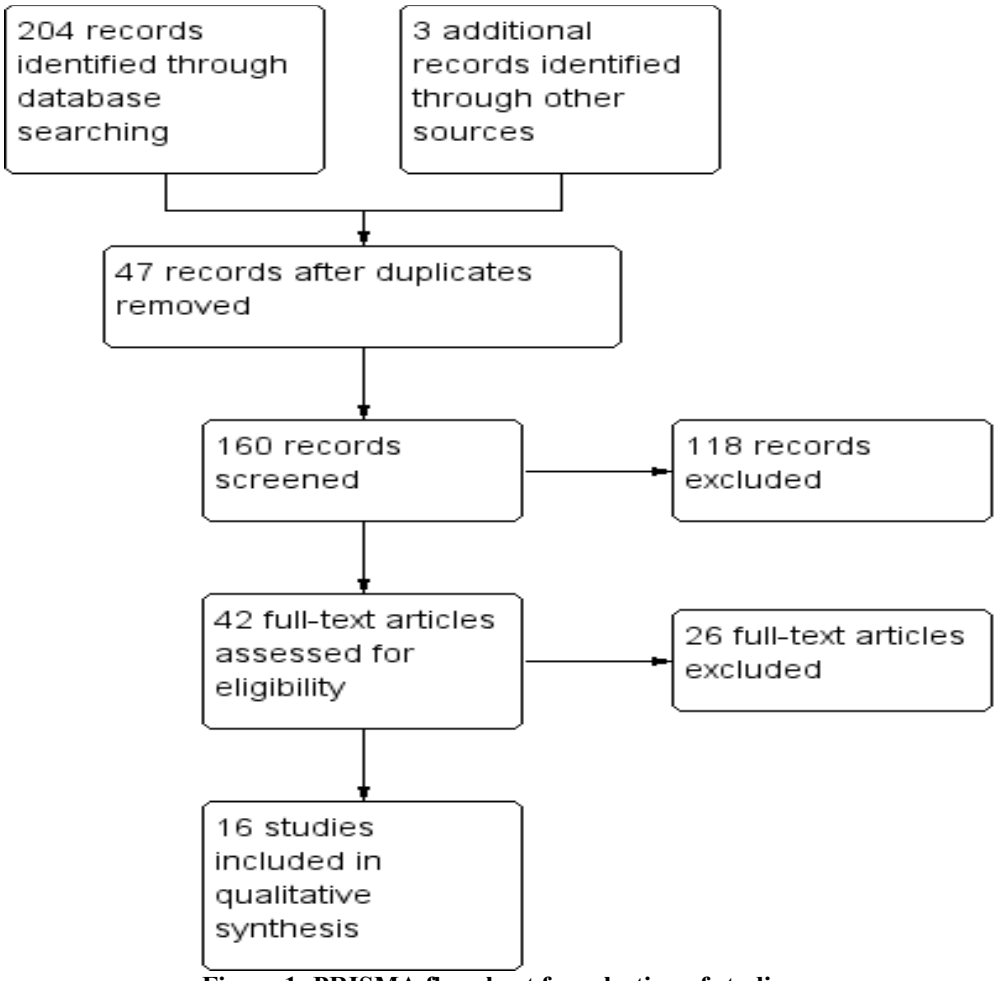

Figure 1: PRISMA flowchart for selection of studies.

Results

This systematic review included a diverse range of studies conducted across various geographical locations, each employing different study designs and tools to assess the quality of life (QOL) in pregnant women. The studies, summarized in Table 1, exhibited a global representation, encompassing research conducted in Turkey [23], China [24], Colombia [25], Portugal [26], Italy [27], Japan [28], Iran [29], the USA [30], Hong Kong [31], the Czech Republic [32], Taiwan [33], Australia [34], Brazil [35], Iran [36], Canada [37], and Taiwan [38]. The study designs varied, incorporating case control studies [23, 27], cross-sectional studies [24, 25, 30, 35, 36], and cohort studies [26, 29, 31, 32, 33, 34, 37, 38]. Sample sizes ranged from 56 [26] to 3388 [37], reflecting the diverse scales of investigations. Study tools employed for assessing QOL included the WHO

QOL BREF questionnaire [23, 32], Standard Short Form 12 Health Survey (SF-12) [24, 30, 34, 37, 38], Medical Outcomes Study Short Form 36 (SF-36) [25, 26, 27, 28, 29, 31, 33, 35, 36], and others.

Table 1: Characteristics of included studies

Study	Study design	Study place	Sample size	Study tool
Coban et al. 2011 [23]	Case control study	Turkey	100	WHO QOL BREF questionnaire
Lau et al. 2011 [24]	Cross sectional study	China	1151	Standard short form 12 health survey (SF-12)
Ramirez-Velez et al. 2011 [25]	Cross sectional study	Colombia	64	Medical outcomes study short form 12 (SF-12)
Tendais et al. 2011 [26]	Cohort study	Portugal	56	Medical outcomes study short form 36 (SF-36)
De Pascalis et al. 2012 [27]	Case control study	Italy	115	Medical outcomes study short form 36 (SF-36)
Nakamura et al. 2012 [28]	Case control study	Japan	692	Medical outcomes study short form 36 (SF-36)
Abbasi et al. 2013 [29]	Cohort study	Iran	1550	Medical outcomes study short form 36 (SF-36)
Liu et al. 2013 [30]	Cross sectional study	USA	195	Medical outcomes study short form 36 (SF-36)
Ngai et al. 2013 [31]	Cohort study	Hong Kong	256	Medical outcomes study short form 12 (SF-12)
Vachkova et al. 2013 [32]	Cohort study	Czech Republic	225	WHO QOL BREF questionnaire
Chang et al. 2014 [33]	Cohort study	Taiwan	410	Medical outcomes study short form 36 (SF-36)
Emmanuel et al. 2014 [34]	Cohort study	Australia	630	Medical outcomes study short form 12 (SF-12)
Dall'Alba et al. 2015 [35]	Cross sectional study	Brazil	82	Medical outcomes study short form 36 (SF-36)
Gharacheh et al. 2015 [36]	Cross sectional study	Iran	328	Medical outcomes study short form 36 (SF-36)
Vinturache et al. 2015 [37]	Cohort study	Canada	3388	Medical outcomes study short form 12 (SF-12)
Tsai et al. 2016 [38]	Cohort study	Taiwan	172	Medical outcomes study short form 12 (SF-12)

The study tools employed in the included studies played a crucial role in assessing the quality of life (QOL) in pregnant women, offering diverse perspectives and comprehensive insights into the multidimensional aspects of this complex phenomenon.

WHO QOL BREF Questionnaire: Utilized by Coban et al. [23] and Vachkova et al. [32], the World Health Organization Quality of Life (WHO QOL BREF) questionnaire is a widely recognized tool for assessing subjective well-being and QOL. Its application in these studies facilitated a holistic evaluation, covering physical health, psychological well-being, social relationships, and environmental factors. Standard Short Form 12 Health Survey (SF-12): Employed by Lau et al. [24], Ngai et al. [31], Emmanuel et al. [34], and Tsai et al. [38], the SF-12 is a validated tool designed to measure health-related quality of life. Its utilization allowed for a comprehensive assessment, encompassing both physical and mental health components, providing a nuanced understanding of the impact on pregnant women's overall well-being.

Medical Outcomes Study Short Form 36 (SF-36): Utilized by several studies, including Ramirez-Velez et al. [25], Tendais et al. [26], De Pascalis et al. [27], Nakamura et al. [28], Abbasi et al. [29], Liu et al. [30], Chang et al. [33], Dall'Alba et al. [35], Gharacheh et al. [36], and Vinturache et al. [37], the SF-36 is a widely employed tool for assessing health-related quality of life across various populations. Its multi-dimensional approach covers physical and mental health domains, providing a comprehensive perspective on the well-being of pregnant women.

Table 2: Factors associated with QOL in pregnant women.

Study	Factors associated with QOL	Key results
Coban et al. 2011 [23]	Back pain	No difference in the different areas of WHO-QOL-BREF: physical health ($p = 0.229$); psychological health ($p = 0.069$), Social relationship ($p = 0.125$), Environment ($p = 0.790$).
Chang et al. 2014 [33]	Pregnancy stage, infertility, abortions, parity, medical condition, pregnancy wanted.	Factors associated with physical component summary: Pregnancy stage ($p < 0.001$), experience of infertility ($p = 0.03$). Factors associated with mental component summary: stage of pregnancy ($p < 0.001$), number of pregnancies ($p = 0.01$), medical condition ($p = 0.04$). Factors associated with overall QOL: Pregnancy stage ($p = 0.01$), desired pregnancy ($p = 0.04$), medical condition ($p < 0.001$).
Emmanuel et al. 2014 [34]	Age, number of pregnancies, ethnicity, stress	A significant relationship is found between the different components of SF12 and maternal stress.
Dall'Alba et al. 2015 [35]	Epigastralgia, esophagogastric reflux	Epigastralgia ($p = 0.009$) and esophagogastric reflux ($p = 0.002$)
Gharachech et al. 2015 [36]	Domestic violence	SF36 sub-scales are lower for abused women than for non-abused women.
Vinturache et al. 2015 [37]	Age, medically assisted reproduction, pre-pregnancy BMI	Statistically significant difference in QOL between spontaneously conceived and medically assisted conceived women ($p < 0.05$).
Tsai et al. 2016 [38]	Sleep patterns	Pittsburgh Sleep Quality Index ($p < 0.01$).

Sociodemographic Factors: Coban et al. 2011 [23] examined the impact of back pain, Coban et al. found no significant difference in various domains of the WHO-QOL-BREF, including physical health ($p = 0.229$), psychological health ($p = 0.069$), social relationships ($p = 0.125$), and environment ($p = 0.790$). This suggests that back pain may not have a distinct sociodemographic influence on the overall quality of life during pregnancy.

Chang et al. 2014 [33] investigated multiple sociodemographic factors such as pregnancy stage, infertility, abortions, parity, and medical condition, Chang et al. revealed significant associations. Pregnancy stage significantly influenced the physical component summary ($p < 0.001$), and experience of infertility impacted it as well ($p = 0.03$). Furthermore, factors like the stage of pregnancy, number of pregnancies, and medical condition were associated with the mental component summary and overall quality of life.

Emmanuel et al. 2014 [34] explored the sociodemographic factors including age, number of pregnancies, ethnicity, and stress, Emmanuel et al. identified a significant relationship between different components of SF12 and maternal stress. This suggests that stress, as a sociodemographic factor, plays a substantial role in shaping the quality of life during pregnancy.

Physical Factors: Dall'Alba et al. 2015 [35] investigated the physical factors of epigastralgia and esophagogastric reflux, Dall'Alba et al. found significant associations. Epigastralgia ($p = 0.009$) and esophagogastric reflux ($p = 0.002$) were identified as factors influencing the overall physical well-being and, consequently, the quality of life during pregnancy.

Psychological Factors: Gharachech et al. 2015 [36] examined the psychological factor of domestic violence, Gharacheh et al. revealed lower SF36 sub-scales for abused women compared to non-abused women. This indicates a significant negative impact of domestic violence on the psychological aspects of quality of life during pregnancy.

Vinturache et al. 2015 [37] assessed the psychological factors of age, medically assisted reproduction, and pre-pregnancy BMI, Vinturache et al. identified a statistically significant difference in quality of life between spontaneously conceived and medically assisted conceived women ($p < 0.05$). This suggests that psychological factors related to conception methods contribute to variations in the overall quality of life during pregnancy.

Tsai et al. 2016 [38] investigated the psychological factor of sleep patterns using the Pittsburgh Sleep Quality Index, Tsai et al. found a significant association ($p < 0.01$). This highlights the substantial influence of sleep patterns on the psychological well-being and, consequently, the overall quality of life during pregnancy.

Discussion

The exploration of factors influencing the quality of life (QOL) in pregnant women, as revealed by the diverse array of studies included in this

systematic review, provides a detailed understanding of the complexities surrounding maternal well-being.

The finding from Coban et al.'s study [23], indicating no significant sociodemographic differences in various dimensions of QOL related to back pain, aligns with the notion that the impact of back pain during pregnancy might be more universally experienced across diverse sociodemographic backgrounds. However, further research is warranted to delve into potential nuances that may emerge in specific subpopulations.

Chang et al.'s comprehensive exploration [33] of sociodemographic factors, encompassing pregnancy stage, infertility, abortions, parity, and medical conditions, underscores the multifaceted nature of influences on QOL during pregnancy. The significant associations identified highlight the need for personalized healthcare interventions, acknowledging the diverse sociodemographic contexts that shape the maternal experience.

Emmanuel et al.'s study [34] highlighting the significant relationship between stress and various components of QOL suggests the critical role of stress as a sociodemographic determinant. Understanding and addressing maternal stress become pivotal in promoting a positive QOL during pregnancy, emphasizing the importance of integrated mental health support within maternal care frameworks. Dall'Alba et al.'s findings [35] on the impact of physical factors like epigastralgia and esophagogastric reflux on QOL underscore the significance of addressing physical discomfort during pregnancy. Strategies targeting gastrointestinal well-being could contribute to enhancing the overall QOL, necessitating a holistic approach to maternal healthcare.

The revelation of lower SF36 sub-scales for abused women by Gharacheh et al. [36] emphasizes the critical need to address the ramifications of domestic violence on maternal psychological well-being. Integrating support services and mental health interventions tailored to address the unique challenges faced by women experiencing domestic violence becomes imperative.

Vinturache et al.'s identification of a statistically significant difference in QOL between spontaneously conceived and medically assisted conceived women [37] underscores the psychological dimensions associated with conception methods. Acknowledging the emotional impact of assisted reproduction on maternal well-being can guide tailored interventions to support women through the challenges associated with fertility treatments. The significant association between sleep patterns and QOL identified by Tsai et al. [38] highlights the importance of addressing sleep-related concerns during pregnancy. Interventions aimed at improving sleep quality may contribute to enhancing the psychological well-being of pregnant women. The integration of these findings calls for a holistic approach to maternal care that recognizes the interconnectedness of sociodemographic, physical, and psychological factors. Tailored interventions, informed by the diverse influences on QOL, can optimize maternal well-being during this critical period. Healthcare professionals must remain vigilant to the unique needs of each pregnant woman, considering the sociodemographic context, physical health status, and psychological factors that contribute to the overall QOL experience.

Despite the valuable insights gained from the included studies, several limitations merit consideration. Heterogeneity in study designs, sample sizes, and measurement tools may introduce variability in the interpretation of results. Future research should strive for standardized methodologies to facilitate more robust comparisons across studies.

Additionally, longitudinal studies could provide a deeper understanding of the dynamic nature of factors influencing QOL throughout the various stages of pregnancy. The synthesis of findings emphasizes the need for personalized, comprehensive, and integrated maternal healthcare strategies that encompass sociodemographic, physical, and psychological dimensions. By addressing these diverse factors, healthcare professionals can contribute to fostering a positive and supportive environment for pregnant women, enhancing their overall well-being, and ensuring a healthier maternal experience.

Conclusion

This systematic review explores factors shaping the quality of life in pregnant women. Sociodemographic, physical, and psychological dimensions intertwine, demanding a holistic approach to maternal care. As healthcare providers navigate this complexity, understanding the unique needs within each dimension becomes paramount. By embracing this comprehensive perspective, the present study contributes a way for improved maternal outcomes, ensuring that the journey through pregnancy is characterized by enhanced quality of life and holistic support.

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