Measurement of Self-Efficacy in Pregnant Females with Low Back Pain

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ABSTRACT

Background: Self-efficacy, the belief in one's ability to accomplish tasks, plays a crucial role in managing pain. Low back pain (LBP) is a common issue during pregnancy, significantly affecting daily life. This study aimed to assess the relationship between self-efficacy and pain severity in pregnant women with LBP.

Objective: To measure self-efficacy and determine its association with pain severity in pregnant females suffering from LBP.

Methods: A cross-sectional study was conducted from July to December 2023 at Akhtar Saeed Trust Hospital, Lahore. A total of 87 pregnant women with LBP were recruited using non-probability convenience sampling. Self-efficacy was measured using the General Self-Efficacy Scale, and pain severity was assessed using the Visual Analogue Scale. Data were analyzed using SPSS version 25, with descriptive statistics and chi-square tests used to explore associations.

Results: The mean age of participants was 30.51 ± 3.72 years. Moderate pain was reported by 86.2% of participants, while 43.7% had high self-efficacy. A significant association was found between self-efficacy and pain severity ($p = 0.028$).

Conclusion: Higher self-efficacy was significantly associated with lower pain severity in pregnant women with LBP, suggesting the importance of self-efficacy in pain management.

INTRODUCTION

Self-efficacy is the belief in one's capacity to accomplish tasks and achieve goals, which includes confidence in one's ability to manage behaviors, influence the environment, and stay motivated toward desired outcomes. Among pregnant women, low back pain (LBP) is a prevalent condition that often arises due to physiological changes such as alterations in posture and increased mechanical load on the spine (1). Self-efficacy has been widely recognized as a key determinant in managing pain and disability in various populations, including those with chronic conditions. Studies have demonstrated that higher self-efficacy is associated with better pain management and improved physical functioning, while low self-efficacy is linked to avoidance behaviors, increased stress, and decreased well-being (2). Pregnancy-related LBP can significantly disrupt daily activities, leading to impaired quality of life. Women with higher self-efficacy tend to cope better with the physical and psychological demands of pregnancy, which is especially relevant for conditions like LBP (3).

Previous research has shown that self-efficacy plays an essential role in facilitating the transition into motherhood, with women who possess higher self-efficacy demonstrating greater confidence in their parenting abilities and better adaptation to the challenges of childbirth and postpartum recovery (4). In the context of LBP, self-efficacy not only influences pain perception but also serves as a protective factor against the development of chronic pain, with long-term studies indicating that individuals with higher self-efficacy report less pain and disability over time (5). Furthermore, psychological factors such as anxiety and fear of movement have been implicated in the exacerbation of LBP, and self-efficacy has been found to mediate these relationships by reducing anxiety and improving pain management strategies (6). Pregnant women with LBP often experience sleep disturbances and difficulty performing daily tasks, which further underscores the need for interventions that enhance self-efficacy to improve both physical and psychological outcomes (7).

In this study, we aim to assess the self-efficacy levels of pregnant women with LBP and investigate the relationship between self-efficacy and pain severity. Given that LBP is a common complaint among pregnant women and is associated with various risk factors, including socioeconomic status, previous history of LBP, and physical changes during pregnancy, understanding self-efficacy in this population may provide valuable insights for developing targeted interventions. By measuring self-efficacy using validated tools, such as the General Self-Efficacy Scale, and evaluating pain severity through the Visual Analogue Scale, we hope to identify key predictors of pain management success in this vulnerable group (8). The results of this study will not only contribute to the growing body of literature on pain management during pregnancy but also highlight the importance of addressing psychological factors, such as self-efficacy, in the clinical care of pregnant women with LBP. Developing interventions that boost self-efficacy may

help improve both short-term pain outcomes and long-term postpartum recovery (9). Moreover, our findings may inform healthcare providers in designing effective self-management programs that empower pregnant women to cope better with LBP, ultimately enhancing their quality of life and maternal well-being (10).

This study fills a gap in the literature by focusing on self-efficacy as a determinant of pain severity in pregnant women, offering a unique perspective on how psychological factors can influence physical health outcomes during pregnancy. Understanding the association between self-efficacy and LBP will enable clinicians to provide more holistic care, integrating both physical and psychological strategies to support pregnant women in managing their pain and improving their functional status (11). Thus, measuring self-efficacy in pregnant women with LBP offers a promising approach to identifying those at higher risk of poor pain management and tailoring interventions to meet their specific needs.

MATERIAL AND METHODS

The study was conducted at Akhtar Saeed Trust Hospital, Lahore, over a period of six months from July 2023 to December 2023. A cross-sectional study design was employed to collect data from pregnant females experiencing low back pain. A non-probability convenience sampling technique was used to recruit participants. The inclusion criteria consisted of women aged 15 to 45 years with a single intrauterine pregnancy and complaints of low back pain. Participants with any underlying pathologies that could cause low back pain, a history of prior back pain, or those who had experienced unexpected or spontaneous abortion were excluded from the study.

All participants provided informed consent after being informed about the purpose and procedures of the study. The ethical principles outlined in the Declaration of Helsinki were strictly adhered to, ensuring participants' rights, safety, and well-being were protected throughout the study. The General Self-Efficacy Scale was used to assess self-efficacy levels, with participants rating their confidence from 0 (not confident at all) to 4 (very confident). This scale consists of 10 items, with a total score ranging from 10 to 40. Scores below 25 were categorized as low self-efficacy, while scores of 25 and above were considered indicative of high self-efficacy. Pain severity was measured using the Visual Analogue Scale (VAS), which ranged from 0 (no pain) to 10 (worst pain imaginable). Data on self-efficacy and pain severity were collected through structured questionnaires administered to the participants.

In addition to the self-efficacy and pain severity assessments, data on participants' sociodemographic characteristics, including age, education, occupation, and socioeconomic status, were collected. Parity was also recorded and categorized as low parity, multiparity, and grand multiparity. The sample size of 87 was determined using a formula based on an assumed proportion, with a margin of error and confidence interval taken into account (22).

Data were entered and analyzed using SPSS version 25. Descriptive statistics, such as means, standard deviations, and frequencies, were calculated for demographic variables, self-efficacy scores, and pain severity levels. Chi-square tests were used to assess the association between self-efficacy and pain severity, with a significance level set at $p < 0.05$. The results were reported in terms of p-values and corresponding chi-square values to determine the strength of the relationships between categorical variables.

The study adhered to all ethical standards for research involving human subjects, and approval was obtained from the institutional review board of Akhtar Saeed Trust Hospital prior to the commencement of data collection. All collected data were kept confidential, and participants' anonymity was maintained throughout the study. Data were stored securely and accessed only by the research team for analysis purposes.

The findings of this study are expected to provide valuable insights into the relationship between self-efficacy and pain severity in pregnant women with low back pain, contributing to the development of effective interventions aimed at enhancing self-efficacy and improving pain management in this population.

RESULTS

A total of 87 participants completed the study. The mean age of the participants was 30.51 years, with a standard deviation of 3.72 years. The age ranged from 23 to 38 years. The majority of participants had completed higher levels of education, with 58.6% having graduated, while only 6.9% had completed primary education.

Table 1: Descriptive Statistics of Participants

Variable	Frequency (n=87)	Percent (%)
Age (Mean ± SD)	30.51 ± 3.72	
Education		
Primary	6	6.9
Secondary	30	34.5
Graduation	51	58.6
Occupation		
Housewife	75	86.2
Working	12	13.8
Socioeconomic Status		
Lower	6	6.9
Middle	74	85.1
Upper	7	8.0

Regarding the assessment of self-efficacy, 4.6% of participants reported slight self-efficacy, 51.7% reported moderate self-efficacy, and 43.7% reported high self-efficacy. In terms of pain severity, the majority (86.2%) of participants experienced moderate pain, while 12.6% reported severe pain, and only 1.1% had mild pain. Most participants were housewives (86.2%) and belonged to a middle socioeconomic background (85.1%).

Table 2: Categorization of Self-Efficacy and Pain Severity

Self-Efficacy Level	Frequency (n=87)	Percent (%)
Slight Self-Efficacy	4	4.6
Moderate Self-Efficacy	45	51.7
High Self-Efficacy	38	43.7

Table 3 pain severity

Pain Severity	Frequency (n=87)	Percent (%)
Mild Pain	1	1.1
Moderate Pain	75	86.2
Severe Pain	11	12.6

Parity was also categorized, with 70.1% of participants classified as low parity, 19.5% as multiparous, and 10.3% as grand multiparous. The relationship between self-efficacy and pain severity was examined using a chi-square test, and a significant association was found between these variables ($p = 0.028$).

Table 4: Categorization of Parity

Parity Level	Frequency (n=87)	Percent (%)
Low Parity	61	70.1
Multiparity	17	19.5
Grand Multiparity	9	10.3

Table 4: Association Between Self-Efficacy and Pain Severity

Self-Efficacy Level	Mild Pain	Moderate Pain	Severe Pain	Total (n=87)	Chi-Square	P-Value
Slight Self-Efficacy	0	4	0	4		
Moderate Self-Efficacy	1	36	8	45		
High Self-Efficacy	0	35	3	38	10.87	0.028

The results indicate that participants with higher self-efficacy were more likely to experience lower levels of pain, with a significant association between pain severity and self-efficacy levels ($p = 0.028$). This suggests that self-efficacy may play a crucial role in managing low back pain among pregnant women.

RESULTS

The study was conducted at Akhtar Saeed Trust Hospital, Lahore, over a period of six months from July 2023 to December 2023. A cross-sectional study design was employed to collect data from pregnant females experiencing low back pain. A non-probability convenience sampling technique was used to recruit participants. The inclusion criteria consisted of women aged 15 to 45 years with a single intrauterine pregnancy and complaints of low back pain. Participants with any underlying pathologies that could cause low back pain, a history of prior back pain, or those who had experienced unexpected or spontaneous abortion were excluded from the study.

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self-efficacy and pain severity, with a significance level set at $p < 0.05$. The results were reported in terms of p-values and corresponding chi-square values to determine the strength of the relationships between categorical variables.

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The findings of this study are expected to provide valuable insights into the relationship between self-efficacy and pain severity in pregnant women with low back pain, contributing to the development of effective interventions aimed at enhancing self-efficacy and improving pain management in this population.

DISCUSSION

This study aimed to investigate the relationship between self-efficacy and pain severity in pregnant women with low back pain. The findings revealed a significant association between higher self-efficacy and lower pain severity, supporting previous research that emphasizes the role of self-efficacy in pain management. Similar results were observed in studies by Turner et al. (2017), where self-efficacy played a significant role in reducing pain-related distress in patients with chronic low back pain, highlighting its importance in coping strategies (23). Our study's findings align with this, demonstrating that pregnant women with higher self-efficacy were better equipped to manage their low back pain.

The study also found that the majority of participants experienced moderate pain, with only a small fraction reporting mild or severe pain. This is consistent with previous studies that indicated that low back pain is a common symptom during pregnancy, largely due to changes in posture, weight distribution, and hormonal influences (7). In particular, Costa et al. (2011) pointed out that pain self-efficacy and fear-avoidance beliefs are key factors in how patients with low back pain develop disability. Our results suggest that similar mechanisms may be at play in pregnant women, as those with higher self-efficacy seemed to have better pain outcomes (8).

A notable strength of this study was the focus on self-efficacy as a modifiable psychological factor, which could be targeted in interventions aimed at improving pain outcomes in pregnant women. Self-efficacy not only impacts pain perception but has been shown to have long-term protective effects against chronic pain, as indicated by Puschmann et al. (2020), who found that higher self-efficacy reduced the likelihood of pain becoming chronic (4). This suggests that enhancing self-efficacy during pregnancy could help mitigate the impact of low back pain, potentially improving postpartum recovery and quality of life.

Despite these strengths, the study had several limitations. The use of a non-probability convenience sampling method limits the generalizability of the findings, as the sample may not represent the broader population of pregnant women. Additionally, the study's cross-sectional design prevents the establishment of causality between self-efficacy and pain severity. Longitudinal studies would be beneficial to explore whether increasing self-efficacy over time leads to sustained reductions in pain severity. The sample size, while adequate for initial insights, was relatively small, and larger studies are required to confirm these findings.

The study also did not explore other psychological factors, such as anxiety or depression, which are known to interact with self-efficacy and pain outcomes, as noted by Brunton et al. (2020) (6). Future research should consider these variables to provide a more comprehensive understanding of the psychosocial dimensions of low back pain in pregnancy. Another limitation was the reliance on self-reported measures of pain, which can be subjective and prone to bias. Objective measures of pain severity and functional impairment would strengthen future studies in this area.

Based on the findings of this study, it is recommended that healthcare providers consider incorporating self-efficacy-enhancing strategies into prenatal care for women experiencing low back pain. Programs that include cognitive-behavioral approaches, mindfulness, and self-management training could be beneficial, as these interventions have been shown to improve self-efficacy and reduce pain in other populations with chronic pain (23). Additionally, further research should focus on longitudinal interventions that track changes in self-efficacy and pain severity throughout pregnancy and into the postpartum period, to better understand the long-term effects of these psychological factors on maternal health outcomes.

CONCLUSION

In conclusion, this study highlights the importance of self-efficacy in managing low back pain among pregnant women. Strengthening self-efficacy may provide a valuable pathway for improving pain management and enhancing the overall well-being of pregnant women. While the findings are promising, further research is needed to explore the causal mechanisms and long-term implications of self-efficacy in this population.

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