

Effect of Educational Guidelines on Anxiety and Self-Esteem among Women Undergoing Hysterectomy

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ABSTRACT

Background: Women undergoing hysterectomy frequently experienced anxiety because they worry about the procedure itself and losing their ability to conceive. Another important factor that influenced by a hysterectomy is self-esteem. When educational guidelines are used well, they can result in superior psychological results, such as decreased anxiety and increased self-esteem. **Objectives:** To evaluate the effect of educational guidelines on anxiety and self-esteem among women undergoing hysterectomy. **Methods:** A quasi experimental research (pre-posttest) was utilized in the study. A purposive sample of 80 women underwent hysterectomy was enrolled. The study conducted at the Women Health Hospital's gynecological department at Assiut University. Three tools were used; a structured interview questionnaire, Zung Self-Rating Anxiety Scale to measure anxiety levels and Rosenberg Self-Esteem Scale to assess self-esteem level. **Results:** The study findings clarified that the majority (85%) of the studied women experience mild to moderate anxiety, only (30%) had high self-esteem before intervention while after intervention, both anxiety & self-esteem was significantly improved ($P < 0.01$). **Conclusion:** Women having hysterectomy saw a considerable and positive improvement in their self-esteem and decreased anxiety when educational guidelines were implemented. For women having a hysterectomy, it is crucial to incorporate educational guidelines into their regular preoperative & postoperative treatment.

Keywords: Anxiety; Educational Guidelines; Hysterectomy and Self-esteem

INTRODUCTION

Hysterectomy is one of the most commonly performed gynecological surgeries worldwide and involves the removal of the uterus (Donati *et al.*, 2026). It is indicated for various benign and malignant conditions, such as uterine fibroids, endometriosis, chronic pelvic pain, abnormal uterine bleeding, and certain reproductive organ cancers (Chang *et al.*, 2025).

There are three main types of hysterectomy: total hysterectomy, which involves complete removal of the uterus, and cervix; subtotal (or partial) hysterectomy, where the uterus is removed but the cervix is preserved; and radical hysterectomy, which includes removal of the uterus, cervix, upper vagina, and surrounding parametrium. In some cases, removal of the ovaries and fallopian tubes (Salpingo - oophorectomy) may be performed simultaneously (Meyer *et al.*, 2025).

An estimated 165,107 hysterectomies are performed annually in Upper Egypt, suggesting that a substantial proportion of women undergo this procedure (Ahmed *et al.*, 2023). Globally, annual hysterectomy rates range from 1.2 to 4.8 per 1,000 women, while obstetric hysterectomy rates continue to rise because of the increasing prevalence of cesarean deliveries (Ojong *et al.*, 2026).

Although hysterectomy effectively treats many gynecological conditions, it is frequently associated with considerable psychological challenges. Women often experience anxiety related to surgery, postoperative recovery, loss of fertility, altered body image, and uncertainty regarding future physical and sexual functioning (Ghali *et al.*, 2025). Such anxiety may negatively influence perioperative recovery and overall psychological well-being.

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Self-esteem represents another important psychological outcome. Because the uterus is commonly perceived as a symbol of femininity, motherhood, and personal identity, its removal may adversely affect women's self-image and self-worth (Mohammed *et al.*, 2025). Cultural beliefs and societal expectations surrounding fertility may further intensify these psychological consequences, particularly in conservative societies where reproductive capacity is closely associated with a woman's social identity (Al-Amer *et al.*, 2025). Consequently, women undergoing hysterectomy remain vulnerable to persistent emotional distress, including anxiety and reduced self-esteem (Samraz *et al.*, 2025).

Educational guidelines have emerged as an important nursing strategy for addressing these psychosocial challenges. By providing structured perioperative education, emotional support, and practical coping strategies, these interventions enhance women's understanding of the surgical process, reduce uncertainty, improve self-efficacy, and promote active participation in care, ultimately contributing to better psychological outcomes (Shen *et al.*, 2026).

The theoretical foundation of these guidelines is consistent with patient-centered care and self-efficacy theory, emphasizing that improved knowledge and confidence facilitate adaptive coping during stressful health experiences (Tomescu-Stachie *et al.*, 2025).

Despite the growing body of evidence supporting educational interventions for women undergoing hysterectomy, inconsistencies remain regarding their psychological benefits across different cultural and healthcare settings. In Egypt, particularly Upper Egypt, studies evaluating structured preoperative educational guidelines and their influence on women's psychological well-being remain limited. This lack of context-specific evidence represents an important research gap, as cultural beliefs and social perceptions surrounding hysterectomy may substantially influence women's anxiety and self-esteem.

Therefore, the present study was conducted to evaluate the effect of structured educational guidelines on anxiety and self-esteem among women undergoing hysterectomy. Unlike many previous studies that primarily emphasized educational or clinical outcomes, the present study provides context-specific evidence regarding the psychological impact of structured educational guidelines within the sociocultural context of Upper Egypt. Also, differences in cultural beliefs, women's perceptions of hysterectomy, educational background, and healthcare resources may influence psychological responses to surgery and the effectiveness of educational interventions. By simultaneously evaluating anxiety and self-esteem, the findings contribute to a more comprehensive understanding of women's psychological adjustment following hysterectomy and provide practical evidence to support the integration of structured preoperative educational programs into routine nursing care.

Significance of Study

After cesarean sections, hysterectomy is the most common gynecological surgery in both developed and developing countries among women over 35 hysterectomy accounts for approximately half of all gynecological surgical procedures (Kallianidis *et al.*, 2023). The increasing rates of cesarean sections have contributed to a rise in the incidence of obstetric hysterectomy worldwide (Thomaidi *et al.*, 2025).

This study was carried out because the number of Egyptian women receiving hysterectomy has been rising recently, and the adverse consequences of this procedure may make it impossible for women to play significant roles in society. As a result, healthcare teams, especially nurses, need to be conscious of these possible effects and know how to support women in overcoming associated obstacles. Therefore, it's critical to assess how supportive instructional guidelines affect women having hysterectomy in terms of anxiety and self-esteem (Omar *et al.*, 2024).

This study is significant because it provides practical evidence regarding the effectiveness of a culturally tailored educational guideline in improving psychological outcomes among women undergoing hysterectomy (Hassan *et al.*, 2025). The findings may assist nurses in implementing structured perioperative educational and psychological support programs that address women's emotional needs in addition to their physical care (Mohamed *et al.*, 2022).

Furthermore, the study contributes context-specific evidence from Upper Egypt, where research evaluating psychosocial nursing interventions for women undergoing hysterectomy remains limited (Kapesa *et*

al., 2026). The findings support the development of standardized nursing guidelines and educational protocols that enhance perioperative nursing practice and improve women's psychological adjustment and recovery following hysterectomy (Farag *et al.*, 2024).

In addition, the results may help healthcare administrators, nurse educators, and policymakers recognize the value of integrating structured educational guidelines into routine gynecological care, which could facilitate evidence-based decision-making, improve the quality of nursing services, and promote holistic patient-centered care for women undergoing hysterectomy.

Objective of the Study

This study aimed to evaluate effect of educational guidelines on anxiety and self-esteem for women undergoing hysterectomy.

Research Hypotheses

H1: Implementing educational guidelines would be effective in reducing anxiety among women undergoing hysterectomy.

H2: Implementing educational guidelines would be effective in improving self-esteem among women undergoing hysterectomy.

METHODOLOGY

Research Design

A quasi-experimental one-group pre-test/post-test design was utilized to evaluate the effectiveness of the instructional educational guidelines on women undergoing hysterectomy.

Setting

The study was conducted in the inpatient gynecological department at Women's Health Hospital, Assiut University, where elective and emergency hysterectomy cases are regularly managed.

Sample

A purposive sample of 80 women undergoing hysterectomy was recruited from the inpatient gynecological department during the study period. During 2024, 178 women underwent hysterectomy in the study setting and represented the accessible population.

A post hoc power analysis has now been added to the Methods section. Using G*Power version 3.1 for a two-tailed paired-samples t-test with a medium effect size (Cohen's $d = 0.50$), $\alpha = 0.05$, and a total sample of 80 participants, the achieved statistical power was approximately 99%, confirming that the study was adequately powered.

Eligibility Criteria

Women aged 18–65 years who were scheduled to undergo any type of hysterectomy and were able to communicate in Arabic were eligible to participate in the study. Women with hearing or visual impairments that could interfere with participation in the educational sessions, as well as those diagnosed with neurological disorders or psychotic symptoms, were excluded from the study.

Data Collection Tools

Three tools were used for data collection.

Tool (I): Structured Interviewing Questionnaire

A structured interviewing questionnaire was developed by the researcher after reviewing the relevant national and international literature, it consisted of three parts:

Part I: Socio Demographic Characteristics (7 items), including age, residence, educational level, occupation, marital status, income, and household composition.

Part II: Medical and Obstetric History (4 items), including chronic diseases, menstrual status, gravidity, and parity.

Part III: Current Hysterectomy-Related Data (3 items), including indications for hysterectomy, type of hysterectomy, and operative technique.

Tool (II): Zung

-Rating Self-Rating Anxiety Scale (SAS)

The Zung Self Anxiety Scale (SAS) was originally developed by Zung (1971) to assess anxiety symptoms. It consists of 20 items rated on a four-point Likert scale.

Scoring Interpretation

- 20–44: Normal anxiety
- 45–59: Mild to moderate anxiety
- 60–74: Marked to severe anxiety
- ≥ 75 : Extreme anxiety

Tool (III): Rosenberg Self-Esteem Scale (RSES)

- The Rosenberg Self-Esteem Scale (RSES) was developed by Rosenberg (1965) and translated into Arabic by Sabra and Hassan. (2020). The instrument consists of 10 items measuring global self-esteem.

Scoring Interpretation

- < 15 : Low self-esteem
- 15–25: Normal self-esteem
- 25: High self-esteem

Validity and Reliability

Content Validity

Content validity was assessed by a panel of five experts in maternity and women's health nursing who evaluated the tools for clarity, relevance, cultural appropriateness, and consistency with the study objectives. The tools were revised according to their recommendations.

Reliability

Internal consistency reliability was assessed using Cronbach's alpha based on the pilot sample. The Cronbach's alpha coefficients were 0.729, 0.626, and 0.844 for Tools I, II, and III, respectively.

Pilot Study

A pilot study was conducted on 10 women (10% of the intended sample) to evaluate the clarity, feasibility and applicability of the data collection tools. No modifications were required; therefore, the pilot participants were included in the final sample.

Data Collection Procedure

Data collection was conducted from November 1, 2024, to August 30, 2025, and consisted of three sequential phases: baseline assessment, intervention, and follow-up.

Assessment Phase (Pre-intervention)

Baseline data were collected during hospital admission before surgery using Tools I, II, and III. Individual interviews lasted approximately 25–30 minutes. Before data collection, the researcher explained the study purpose and procedures, obtained oral informed consent approved by the ethics committee, answered

participants' questions, and ensured privacy and confidentiality throughout the interview.

Intervention Phase

Following completion of the baseline assessment, participants received educational guidelines through two structured preoperative educational sessions, lasting approximately 45–60 minutes; sessions were conducted in small groups of no more than three women to encourage interaction.

The first session addressed the definition, indications, types of hysterectomy, expected physical and psychological changes, and preoperative preparation. The second session focused on postoperative self-care, pain management, early ambulation, nutrition, wound care, follow-up visits, and strategies for reducing anxiety and enhancing self-esteem.

Teaching methods included lectures, group discussion, question-and-answer sessions, and illustrated educational materials. Participants received an illustrated booklet written in simple Arabic. The educational content was developed following a review of current literature and clinical recommendations and was reviewed by five experts in obstetric and Following completion of the baseline assessment, participants received educational guidelines through two structured preoperative educational sessions, lasting approximately 45–60 minutes; sessions were conducted in small groups of no more than three women to encourage interaction.

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Follow-up Phase (Post-intervention)

Participants were reassessed six weeks after hysterectomy during their scheduled outpatient follow-up visit using the Zung Self-Rating Anxiety Scale and the Rosenberg Self-Esteem Scale (Tools II and III). The post-intervention assessment was conducted to evaluate changes in anxiety and self-esteem following implementation of educational guidelines.

Ethical Considerations

The ethical approval for this study was obtained from the Ethics Committee of the Faculty of Nursing, Assiut University, Egypt with Approval No. 1120240904 on October 27th 2024.

Written permission to conduct the study was obtained from the hospital authorities responsible. Participants were informed about the purpose and procedures of the study, and verbal informed consent was obtained prior to participation. Participation was voluntary, and participants were informed of their right to withdraw from the study at any time without penalty. Confidentiality and anonymity of the collected data were assured, and all data were used solely for research purposes. Privacy was maintained throughout the data collection process.

Statistical Design

The collected data was coded, tabulated and analyzed by using the statistical package for the social science programs (SPSS) version 26. Range, mean, and standard deviation were used to characterize the quantitative data, whereas frequency and percentages were used to characterize the qualitative variables and represent discrete data. Frequency, percentage, mean, and standard deviation were used to express continuous data. The chi-square test was used to compare categorical variables. The mean scores prior to and following the nursing intervention were compared using the independent *t*-test. Less than 0.05 was regarded as a significant probability (*P*-value) and less than 0.001 as a highly significant one.

RESULTS

Table 1: Distribution of the Studied Women According to Their Demographic Characteristics (n = 80)

Personal Data	N	%
Age (years):		
From 30-39 years	8	10.0
From 40-49 years	32	40.0
More than 50 years	40	50.0
Educational Level:		
Illiterate	33	41.25
Literate / primary school	16	20.0
Secondary school / diploma	25	31.25
University & high education level	6	7.5
Occupation:		
Housewife	62	77.5
Works	18	22.5
Residence:		
Rural	50	62.5
Urban	30	37.5
Marital Status:		
Single	1	1.25
Married	46	57.5
Divorced	7	8.75
Widow	26	32.5
Income:		
Income lower than expenses	32	40.0
Income equal to expenses	48	60.0
Household Composition:		
Spouse	1	1.25
Children	28	35.0
Spouse & children	45	56.25
Alone	6	7.5

Table 1 presents the demographic characteristics of the studied women. The sample was predominantly composed of older women, with half (50.0%) aged 50 years or above. Overall, the participants were characterized by relatively low socioeconomic and educational profiles, as 41.2% were illiterate, 77.5% were housewives, and 60.0% reported that their monthly income was only sufficient to meet household expenses. Most participants resided in rural areas (62.5%), were married (57.5%), and more than half (56.2%) lived with their spouses and children, indicating that the study population mainly represented married women from rural households with limited educational and economic resources.

Table 2: Distribution of the Studied Women Based on Their Medical and Obstetric History (n = 80)

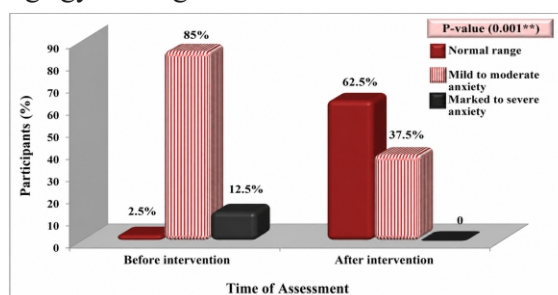
Items	N	%
Chronic Diseases:		
Diabetes	35	43.75
Hypertension	15	18.75
Cardiac disorders	12	15.0
None	18	22.5
Menstrual Status:		
Menstruating	36	45.0
Pre-menopause	4	5.0
Menopause	40	50.0
Gravidity:		
Nulligravida	8	10.0
From 2-4 pregnancy	59	73.75
More than 4 pregnancies	13	16.25
Parity:		
Nullipara	8	10.0
From 2-4 pregnancy	59	73.75
More than 4 pregnancies	13	16.25

Table 2 presents the medical and obstetric history of the studied women. Diabetes mellitus was the most common chronic disease (43.8%), while 22.5% had no chronic illness. Half of the participants (50.0%) had reached menopause, indicating that the sample mainly comprised per- and post-reproductive women. Nearly three-quarters (73.8%) had two to four pregnancies with a corresponding parity, reflecting a predominance of multiparous women in the study populations.

Table 3: Distribution of the Studied Women Based on Their Current Clinical Data Related to Hysterectomy (n = 80)

Items	N	%
Indications of Hysterectomy:		
Fibroids	30	37.5
Prolapse	16	20.0
Endometriosis	1	1.25
Peripartum hysterectomy	6	7.5
Other causes	27	33.75
Types of Hysterectomy:		
Total hysterectomy	67	83.75
Subtotal hysterectomy	13	16.25
Techniques of Hysterectomy:		
Abdominal	68	85.0
Vaginal	12	15.0

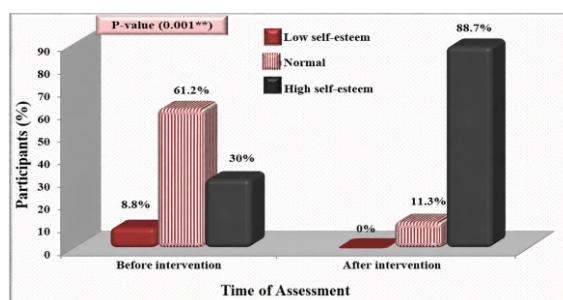
Table 3 summarizes the current clinical characteristics of the studied women related to hysterectomy. Uterine fibroids were the leading indication for hysterectomy (37.5%), followed by other gynecological causes (33.8%) and uterine prolapse (20.0%). Most women underwent total hysterectomy (83.8%) using the abdominal approach (85.0%), indicating that the study population was predominantly managed with total abdominal hysterectomy for benign gynecological conditions.



McNemar; (**) highly statistical significant difference

Figure 1: Total Anxiety Levels of Studied Women before and after the Intervention (n = 80)

Figure 1 demonstrates a remarkable improvement in anxiety following the educational intervention. Prior to the intervention, 85% of the women reported mild to moderate anxiety. After the intervention, this proportion decreased to 37.5%, with a highly statistically significant difference detected (McNemar test, $p = 0.001$). This indicates a positive impact of the instructional support guidelines on reducing anxiety levels.



McNemar; (**) highly statistical significant difference

Figure 2: Total Self-Esteem Levels of Studied Women Before and After the Intervention (n = 80)

Figure 2 demonstrates a clear improvement in self-esteem levels post-intervention, with all women moving out of the low self-esteem category and a notable rise in the high self-esteem group. The statistically significant change (McNemar test, $p = 0.001$) reinforces the positive psychological impact of the guidelines. Including confidence intervals or change indices would further strengthen the interpretation of these findings.

DISCUSSION

One of the most common gynecological procedures carried out globally is a hysterectomy, which involves removing a woman's uterus. Numerous medical conditions, including uterine fibroids, endometriosis, persistent pelvic pain, irregular bleeding, and specific reproductive organ malignancies, may warrant this operation (Chang *et al.*, 2025). This study aimed to evaluate the effect of educational guidelines on anxiety and self-esteem among women undergoing hysterectomy. The findings indicate that structured educational interventions significantly reduced anxiety levels and improved self-esteem, supporting the study hypothesis. Before the intervention, most women exhibited mild to moderate anxiety, and less than one-third had high self-esteem. After the intervention, less than two-fifths of women remained in the mild-to-moderate anxiety category, while the majority achieved high self-esteem, with no cases in the low self-esteem category. These results provide strong evidence that educational guidelines can positively influence psychological outcomes during the perioperative period, thereby addressing the study's aim and hypotheses.

Socio-demographic data showed that half of the women were fifty years or older, over three-quarters were housewives, and less than two-thirds lived in rural areas. Regarding medical history, diabetes was the most prevalent condition, and half of the studied women were in the menopausal stage. Obstetric history revealed that fewer than three-quarters had been pregnant and given birth two to four times. Current surgical data indicated that uterine fibroids were the most common indication for hysterectomy, and the majority underwent total abdominal hysterectomy.

These findings are consistent with regional studies (Ahmed *et al.*, 2023; Kahlil *et al.*, 2024), which reported similar demographic and clinical characteristics among women undergoing hysterectomy. The predominance of women aged fifty years and older may be attributed to the increased incidence of gynecological conditions requiring hysterectomy, such as uterine fibroids and abnormal uterine bleeding, during the perimenopausal and menopausal periods. The high proportion of housewives and rural residents may reflect the demographic profile of women attending governmental healthcare facilities in Upper Egypt, where access to specialized gynecological services is concentrated in tertiary hospitals.

The predominance of diabetes among the studied women may be related to the increasing prevalence of chronic metabolic disorders among middle-aged women, which can influence gynecological health and surgical outcomes. Furthermore, uterine fibroids were the most common indication for hysterectomy, likely because they are among the most frequent benign gynecological conditions leading to persistent symptoms and reduced quality of life when conservative treatment is unsuccessful.

In contrast, some studies reported hypertension or subtotal hysterectomy as more prevalent (Ibrahim & Mohammed., 2022; Rehan *et al.*, 2023). These discrepancies may be explained by differences in the age distribution of participants, referral patterns, clinical protocols, availability of surgical expertise, and institutional preferences regarding hysterectomy techniques. Variations in socioeconomic characteristics and healthcare accessibility across study settings may also contribute to these differences.

Regarding women's total anxiety levels and self-esteem before and after the intervention, the findings revealed a significant improvement in both outcomes. Before the intervention, most women experienced mild-to-moderate anxiety and lower self-esteem; however, substantial improvements were observed following implementation of educational guidelines.

This improvement may be attributed to the provision of accurate and comprehensive information regarding hysterectomy, which helped reduce uncertainty, correct misconceptions, and enhance women's sense of preparedness for surgery. Increased understanding of the surgical procedure, expected outcomes, and postoperative recovery may have reduced fear of the unknown, a major contributor to preoperative anxiety. In addition, the supportive nature of the educational sessions encouraged active participation, allowed women to express concerns, and provided reassurance, thereby promoting psychological comfort and self-confidence.

Improved self-esteem may also be explained by helping women develop realistic expectations and effective coping strategies to manage the physical and emotional challenges associated with hysterectomy.

These findings are consistent with studies demonstrating the effectiveness of educational and supportive interventions in reducing perioperative anxiety and enhancing self-esteem (Kahlil *et al.*, 2024; Alsufyani *et al.*, 2024; Izurieta *et al.*, 2023).

Conversely, some studies reported no significant anxiety reduction or lower baseline self-esteem despite interventions (Thorn & Uhrenfeldt, 2020; Agüero-Millan *et al.*, 2023). Such discrepancies may be related to differences in intervention intensity and content, timing of outcome assessment, participant characteristics, baseline psychological status, cultural perceptions of hysterectomy, and the availability of family and social support. Variations in sample size and methodological approaches may have also influenced the observed outcomes. Overall, the present findings suggest that tailored instructional educational guidelines can play an important role in improving the psychological well-being of women undergoing hysterectomy (Kahlil *et al.*, 2024).

While educational guidelines were effective, other factors may also have contributed to women's psychological well-being. Factors such as age, social support, and prior exposure to health education, cultural background, educational level, individualized counseling, and communication with healthcare providers may have influenced how women received and interpreted the guidelines.

Implications for Nursing Practice

The results directly affect nursing practice. To teach women about the surgical process, preoperative and postoperative care, coping mechanisms, and emotional support, nurses can use supportive instructional guidelines. Patients can feel more empowered, have less anxiety, and have higher self-esteem when structured counseling sessions, culturally relevant information, and personalized guidance are integrated. These interventions enhance recovery, compliance with postoperative instructions, and general quality of life in addition to improving perioperative psychological outcomes.

Limitations

The study was limited to a single hospital, which may affect the generalizability of the findings to other healthcare facilities with different practices or patient demographics. The absence of a control group makes it difficult to attribute changes solely to the instructional educational guidelines, as other external factors may have influenced outcomes. Additionally, without long-term follow-up, the study only reflects short-term effects on anxiety and self-esteem.

Future Scope

Future research should explore broader outcomes, including quality of life, across diverse populations, and consider alternative delivery methods, such as digital platforms or group counseling, to enhance accessibility and tailor interventions to individual needs.

Conclusion

The implementation of educational guidelines among women undergoing hysterectomy resulted in a significant reduction in anxiety, with less than two-fifths of women reporting mild-to-moderate anxiety after the intervention, and a marked improvement in self-esteem, with the majority achieving high self-esteem post-intervention. These findings highlight the effectiveness of structured educational support in enhancing psychological well-being during the perioperative period.

Recommendations

Educational guidelines should be integrated into standard preoperative and postoperative care to enhance psychological readiness, reduce anxiety, and improve self-esteem. Nurses and healthcare providers can use these structured guidelines to deliver patient-centered education, emotional support, and coping strategies tailored to individual needs. Future research should involve larger, more diverse populations across multiple healthcare settings to increase generalizability, assess long-term effects, and evaluate alternative delivery

methods for wider accessibility and practical implementation.

AI Assistance Declaration

The authors used Chat GPT for academic wording and text summarization during the preparation of this manuscript. All outputs generated with AI assistance were critically reviewed, edited, and approved by the authors, who take full responsibility for the final version of the manuscript.

CRedit authorship contribution statement:

Z.M.A: Conceptualization, Methodology, Data collection and writing original draft. N.H.A: Supervision, review and editing. W.H.I: Validation and Formal analysis.

Conflict of Interest

The authors have no conflicts of interest.

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