RESEARCH PAPER

From the Operating Theatre to the Neighborhood: A Multidisciplinary Maternal–Pediatric–Community Nursing Intervention to Reduce Post-Traumatic Stress Disorder and Improve Maternal and Child Well-Being Following Emergency Surgical Peripartum Hysterectomy

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Abstract

Background: Emergency surgical peripartum hysterectomy (ESPH) is a life-saving obstetric procedure performed to control severe and life-threatening maternal hemorrhage. Despite its lifesaving value, the emergency nature of the surgery, fear of death, loss of reproductive capacity, surgical trauma, and sudden

disruption of expected motherhood may expose women to profound psychological distress and post-traumatic stress disorder (PTSD). postoperative self-care, coping, maternal functioning, and social reintegration. **Aim**: To evaluate the effect of a multidisciplinary nursing intervention extending from the operating theatre to the neighborhood on PTSD Reduce Post-Traumatic Stress disorder following emergency surgical peripartum hysterectomy. **Method**: A quasi-experimental one-group pretest–posttest design with follow-up was conducted among a purposive sample of 100 women who underwent emergency surgical peripartum hysterectomy. The study was conducted in the Obstetric and Gynecological Departments and Surgical Units of Sohag University Hospitals, Sohag, Egypt. Data were collected using Tool I: Structured Interview Questionnaire for Women Undergoing Emergency Peripartum Hysterectomy; Tool II: Post-Traumatic Stress Disorder Checklist for DSM-5 (PCL-5); Tool III: Depression, Anxiety and Stress Scale—21 Items (DASS-21); Tool IV: Brief COPE Inventory; Tool V: Multidimensional Scale of Perceived Social Support (MSPSS), Tool VI: Researcher-Developed Psychological Adjustment and Self-Care Recovery Scale Following Emergency Peripartum Hysterectomy, and Tool VIII: Maternal–Infant Bonding, Infant Care Competence and Pediatric Well-Being Assessment Scale. **Results**: Following implementation of the multidisciplinary nursing intervention, women demonstrated a marked reduction in PTSD symptoms and psychological distress, accompanied by improvements in psychological well-being, coping, postoperative self-care, maternal functioning, and perceived social support. The observed improvements were maintained during follow-up, indicating the potential benefit of extending nursing care beyond the acute hospital setting. Significant differences were observed between pre-intervention and post-intervention assessments ($p < 0.001$). **Conclusion**: A multidisciplinary nursing intervention extending from the operating theatre to the home may be an effective approach for reducing PTSD symptoms and promoting psychological and functional recovery among women following emergency surgical peripartum hysterectomy. **Recommendations**: Routine PTSD screening should be incorporated into the postoperative care pathway for women undergoing ESPH.

Keywords: Emergency Surgical Peripartum Hysterectomy, From the Operating Theatre to the Neighborhood, Maternal and Child Well-Being , Post-Traumatic Stress Disorder.

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Introduction

Emergency surgical peripartum hysterectomy (ESPH) is a major obstetric surgical procedure performed when severe postpartum or peripartum hemorrhage cannot be adequately controlled by conservative medical, pharmacological, or uterine-sparing surgical measures. Although the procedure can be lifesaving and may prevent maternal death from uncontrolled hemorrhage, it represents a sudden and profound reproductive event for women who may have expected to continue their reproductive lives. The emergency context, rapid deterioration, exposure to severe bleeding, intensive medical interventions, and urgent surgery may make the childbirth experience particularly traumatic and may have consequences extending beyond physical recovery. The psychological impact is therefore an important component of comprehensive care following emergency hysterectomy **(Yousef et al., 2026).**

The transition to motherhood is normally accompanied by substantial physical, emotional, and social changes; however, an emergency obstetric event may disrupt this transition and increase vulnerability to psychological distress **(Dekel et al., 2024).** Women who experience life-threatening complications during childbirth may develop intrusive memories, avoidance, negative emotional responses, hyperarousal, anxiety, depressive symptoms, and other manifestations associated with post-traumatic stress. Research among women reporting traumatic childbirth experiences has demonstrated that a considerable proportion may experience clinically important post-traumatic stress symptoms, emphasizing that traumatic childbirth should not be considered solely a short-term physical event **(Ekelöf et al., 2025).**

Post-traumatic stress disorder (PTSD) following childbirth can involve re-

experiencing the traumatic event, avoidance of reminders, negative alterations in cognition and mood, and heightened arousal and reactivity. These symptoms may interfere with maternal adaptation, emotional well-being, interpersonal relationships, and engagement in postpartum care **(Ahsan et al., 2023).**

Psychological distress following traumatic childbirth may coexist with depressive symptoms and reduced psychological well-being. Perinatal mental health problems can affect a woman's ability to function, interact with her infant and family, participate in self-care, and recover from childbirth-related complications. The World Health Organization emphasizes that mental health is an integral component of maternal and postnatal care and recommends that maternal health services provide opportunities for early identification of psychological difficulties and appropriate psychosocial or psychological support. Consequently, women undergoing ESPH require attention not only to surgical recovery but also to their psychological adaptation and overall well-being **(Buckingham & Gordon, 2022).**

In addition to psychological symptoms, emergency hysterectomy may influence women's perception of themselves as mothers, their reproductive identity, postoperative self-care, physical functioning, and ability to resume family and social roles. Recovery after major abdominal surgery requires women to manage pain, wound care, medications, mobility, nutrition, fatigue, and warning signs of complications while simultaneously adapting to the demands of motherhood. When these physical demands occur in the context of a traumatic delivery and unexpected loss of fertility, women may require individualized education, emotional support, coping assistance, and reinforcement of self-care skills throughout the recovery period **(Turan et al., 2024).**

Coping and perceived social support are also important components of recovery following traumatic childbirth. Women who have experienced traumatic birth may benefit from supportive interpersonal relationships and adaptive coping strategies, whereas inadequate support or ineffective coping may contribute to persistent psychological symptoms. Evidence examining psychosocial predictors of postpartum PTSD has identified factors such as social support and coping among variables relevant to women's responses following traumatic childbirth. Therefore, interventions that strengthen adaptive coping, enhance perceived social support, promote emotional expression, and facilitate access to appropriate professional assistance may contribute to more comprehensive recovery **(Chen et al., 2024).**

The World Health Organization recommends integrating mental health assessment and support into routine maternal and postnatal services rather than treating psychological health as a separate component of care. Postnatal care should provide women with information, reassurance, emotional support, and appropriate follow-up according to their individual needs. For women who undergo ESPH, this principle is particularly important because recovery does not end when the acute surgical episode is completed. Continued nursing contact after discharge can facilitate reinforcement of self-care behaviors, monitoring of psychological symptoms, promotion of coping and maternal functioning, identification of complications, and timely referral when more specialized psychological care is required **(World Health Organization, 2022).**

Accordingly, a multidisciplinary nursing intervention extending from the operating theatre to the home and community may provide a comprehensive framework for addressing the multidimensional consequences of ESPH. Such an approach can combine postoperative nursing care, individualized education, psychological support, PTSD and depression screening, coping-skills training, promotion of self-care and maternal functioning, family and social-support enhancement, and continuity of follow-up after hospital discharge. This integrated approach is consistent with contemporary recommendations emphasizing continuity of maternal care and integration of mental health into routine maternal and postnatal services **(Liao et al., 2025).**

Following emergency surgical peripartum hysterectomy, maternal recovery extends beyond physical and psychological outcomes to include the woman’s ability to establish a positive relationship with her newborn and resume her caregiving role. Maternal–infant bonding is an important emotional and behavioral process characterized by affection, closeness, responsiveness, and interaction between the mother and infant, while maternal competence in infant care reflects the mother’s confidence and ability to recognize and appropriately respond to the infant’s needs. These dimensions are particularly important among women experiencing severe birth-

related trauma, psychological distress, or disruption of expected motherhood, as maternal emotional well-being may influence early mother–infant interaction and bonding. A comprehensive assessment should therefore address the quality of maternal–infant interaction, responsiveness to infant cues, breastfeeding and feeding practices, basic newborn care, hygiene and cord care, safe sleep, recognition of neonatal danger signs, immunization and follow-up, and the mother's confidence in providing routine infant care. The World Health Organization emphasizes responsive caregiver–infant interactions, breastfeeding support, recognition of newborn danger signs, and continuity of maternal and newborn care across health-facility and community settings as essential components of positive postnatal care. Accordingly, the Maternal–Infant Bonding, Infant Care Competence and Pediatric Well-Being Assessment Scale was developed by the researcher to provide an integrated assessment of the mother–infant relationship, maternal caregiving competence, and basic indicators of infant well-being, thereby allowing pediatric nursing outcomes to be incorporated into the multidisciplinary intervention and evaluated during the post-intervention and follow-up periods **(Nakić Radoš et al., 2024).**

Significance of the Study

Emergency surgical peripartum hysterectomy represents a major and unexpected obstetric event that may have consequences extending beyond immediate control of maternal hemorrhage. In addition to the physical burden of major surgery, women may experience emotional distress associated with a life-threatening childbirth experience, permanent loss of fertility, altered body image, and disruption of expected maternal experiences. These factors highlight the importance of addressing psychological and functional recovery as integral components of post-hysterectomy nursing care. The World Health Organization emphasizes that postnatal care should address women's physical and psychological needs and should extend beyond the immediate period following childbirth **(World Health Organization, 2022).**

PTSD following traumatic childbirth may remain unrecognized because routine postpartum care often focuses primarily on physical recovery and the newborn's health. Early identification of post-traumatic stress symptoms, depressive symptoms, and reduced psychological well-being may facilitate timely support and referral. Incorporating validated assessment tools such as the PCL-5 and EPDS into nursing follow-up can help identify women who require additional psychological or psychosocial support **(Ahsan et al., 2023).**

The study is significant because women undergoing emergency surgical peripartum hysterectomy may experience PTSD, psychological distress, impaired coping, and difficulties with postoperative self-care and maternal functioning, while also facing challenges in maternal–infant bonding and infant care. Integrating maternal, pediatric, and community nursing may provide continuous support from the operating theatre to the home, promoting psychological recovery, maternal–infant bonding, infant-care competence, pediatric well-being, and successful social reintegration.Continuity of care is consistent with the WHO emphasis on integrated and person-centered postnatal services **(Emmanouilidou et al., 2025).** The findings may provide evidence for strengthening nursing pathways that incorporate PTSD screening, psychological support, self-care education, coping enhancement, maternal-function support, and continued follow-up after hospital discharge **(Pathiraja & Jayawardane, 2021).**

Aim of the Study

The aim of the present study was to:

To evaluate the effect of a multidisciplinary nursing intervention extending from the operating theatre to the neighborhood on PTSD Reduce Post-Traumatic Stress disorder following emergency surgical peripartum hysterectomy.

Research Hypotheses

1. **H1:** Women following emergency surgical peripartum hysterectomy who receive the multidisciplinary nursing intervention will demonstrate significantly lower PTSD symptom scores after the intervention and at follow-up compared with their pre-intervention scores.
2. **H2:** Women who receive the multidisciplinary nursing intervention will demonstrate significantly lower depressive symptom scores after the intervention and at follow-up compared with their pre-intervention scores.

3. **H3:** Women who receive the multidisciplinary nursing intervention will demonstrate significantly higher psychological well-being scores after the intervention and at follow-up compared with their pre-intervention scores.
4. **H4:** Women who receive the multidisciplinary nursing intervention will demonstrate significantly improved postoperative self-care and recovery after the intervention and at follow-up compared with their pre-intervention scores.
5. **H5:** Women who receive the multidisciplinary nursing intervention will demonstrate significantly improved adaptive coping after the intervention and at follow-up compared with their pre-intervention scores.
6. **H6:** Women who receive the multidisciplinary nursing intervention will report significantly higher perceived social support after the intervention and at follow-up compared with their pre-intervention scores.
7. **H7:**Women who receive the multidisciplinary maternal–pediatric–community nursing intervention will demonstrate significant improvements in maternal–infant bonding, infant-care competence, and pediatric well-being after the intervention, with these improvements maintained at follow-up compared with pre-intervention levels.

Subjects and Methods

Research Design

A **quasi-experimental one-group pretest–posttest design with follow-up assessment** was used to evaluate the effect of a multidisciplinary nursing intervention extending from the operating theatre to the home and community on PTSD symptoms, depressive symptoms, psychological well-being, postoperative self-care and recovery, coping, maternal functioning, and perceived social support among women following emergency surgical peripartum hysterectomy.

Setting

The study was conducted in the Obstetric and Gynecological Departments and Surgical Units of Sohag University Hospitals, Sohag, Egypt. These units provide emergency obstetric and surgical services and receive women requiring emergency management of severe obstetric complications, including emergency surgical peripartum hysterectomy.

Subjects

A **purposive sample of 100 women** who underwent emergency surgical peripartum hysterectomy was recruited according to the predetermined eligibility criteria.

Inclusion Criteria

Women were included if they:

- Had undergone emergency surgical peripartum hysterectomy following childbirth because of a life-threatening obstetric condition.
- Were medically stable enough to participate in the intervention and assessments.
- Were able to communicate verbally and participate in the educational and counseling sessions.
- Were available for postoperative and home/community follow-up.
- Agreed to participate voluntarily in the study.

Exclusion Criteria

Women were excluded if they:

- Had a documented psychiatric or cognitive disorder that interfered with participation or assessment.
- Had severe postoperative complications requiring prolonged intensive care that prevented participation.
- Had major medical conditions that substantially interfered with the planned intervention.
- Were unable to complete the assessment tools or follow-up procedures.

Sample Size

The sample size was calculated using **G*Power 3.1.9.7** for a one-group repeated-measures design with three assessment points (pre-intervention, post-intervention, and follow-up).

Assuming a **medium effect size (f = 0.25)**, a significance level of **α = 0.05**, and statistical power of **80%**, the required sample size was estimated. To compensate for possible attrition and incomplete follow-up assessments, the sample was increased to **100 women** who underwent emergency surgical peripartum hysterectomy.

Sample Size Calculation

The sample size was calculated using the following formula for estimating the sample required to detect the expected effect of the nursing intervention:

$$n=\frac{(Z_{\alpha/2}+Z_{\beta})^2}{d^2}$$

Data Collection Tools

Tool I: Structured Interview Questionnaire for Women Undergoing Emergency Peripartum Hysterectomy

A structured interviewing questionnaire was developed by the researcher after reviewing relevant literature to assess the sociodemographic, obstetric, reproductive, surgical, and clinical characteristics of women undergoing emergency peripartum hysterectomy. The questionnaire consisted of two parts. **Part I** assessed sociodemographic characteristics, including age, residence, educational level, occupation, marital status, and family income.

Part II assessed obstetric and reproductive history, including gravidity, parity, previous postpartum hemorrhage, previous cesarean sections, Indication for emergency hysterectomy, Blood transfusion, and ICU admission.

Tool II: PTSD Checklist for DSM-5 (PCL-5)

The **PTSD Checklist for DSM-5 (PCL-5)** by **Blevins et al., (2015)** was used as the primary outcome measure to assess the severity of post-traumatic stress symptoms following emergency peripartum hysterectomy. The PCL-5 is a 20-item self-report instrument corresponding to the 20 DSM-5 PTSD symptoms. Participants were asked to consider the emergency surgical/peripartum hysterectomy experience as the index stressful event and indicate how much they had been bothered by each symptom during the previous month. The items cover four DSM-5 symptom clusters: **Criterion B—intrusion symptoms** (items 1–5), including intrusive memories, distressing dreams, flashbacks, psychological distress, and physiological reactions to reminders; **Criterion C—avoidance symptoms** (items 6–7), including avoidance of memories, thoughts, feelings, people, places, or activities associated with the event; **Criterion D—negative alterations in cognition and mood** (items 8–14), including trauma-related amnesia, negative beliefs, blame, negative emotions, loss of interest, detachment, and inability to experience positive emotions; and **Criterion E—alterations in arousal and reactivity** (items 15–20), including irritability, risky behavior, hypervigilance, exaggerated startle response, concentration difficulties, and sleep disturbance. Each item is rated on a five-point Likert scale ranging from **0 = Not at all, 1 = A little bit, 2 = Moderately, 3 = Quite a bit, and 4 = Extremely**. The PCL-5 generally requires approximately 5–10 minutes to complete and can be used to monitor symptom severity and change following an intervention.

Scoring: Each of the 20 items is scored from 0 to 4, producing a possible total score ranging from **0 to 80**, with higher scores indicating greater PTSD symptom severity. Cluster scores can also be calculated: Criterion B = items 1–5; Criterion C = items 6–7; Criterion D = items 8–14; and Criterion E = items 15–20. A commonly used research cutoff of approximately **31–33** has been suggested for probable PTSD, although the optimal cutoff may vary according to the population and purpose of assessment. For DSM-5 symptom-cluster scoring, an item rated **2 or higher** can be considered endorsed, with at least 1 Criterion B symptom, 1 Criterion C symptom, 2 Criterion D symptoms, and 2 Criterion E symptoms required for the symptom-pattern component of a provisional PTSD classification. The PCL-5 should not be considered a substitute for a clinician-administered diagnostic interview such as CAPS-5 when a formal diagnosis is required.

Tool III: Depression, Anxiety and Stress Scale—21 Items (DASS-21)

The **Depression, Anxiety and Stress Scale—21 items (DASS-21)** by **Lovibond & Lovibond, (1995)** was used to assess psychological distress accompanying PTSD symptoms after emergency peripartum hysterectomy. The DASS-21 is a 21-item self-report scale consisting of three seven-item subscales measuring depression, anxiety, and stress. The depression subscale consists of items

3, 5, 10, 13, 16, 17, and 21 and assesses symptoms such as loss of positive feelings, hopelessness, low motivation, and diminished interest. The anxiety subscale consists of items 2, 4, 7, 9, 15, 19, and 20 and assesses physiological arousal, situational anxiety, fear, and panic-like symptoms. The stress subscale consists of items 1, 6, 8, 11, 12, 14, and 18 and assesses difficulty relaxing, nervous tension, irritability, agitation, and over-reactivity. Participants rate how much each statement applied to them during the previous week using a four-point scale: 0 = Did not apply to me at all, 1 = Applied to me to some degree or some of the time, 2 = Applied to me to a considerable degree or a good part of the time, and 3 = Applied to me very much or most of the time.

Scoring: Each subscale contains seven items with a possible raw score of **0–21**. The conventional DASS-21 interpretation is: for **Depression**, 0–4 = normal, 5–6 = mild, 7–10 = moderate, 11–13 = severe, and ≥14 = extremely severe; for **Anxiety**, 0–3 = normal, 4–5 = mild, 6–7 = moderate, 8–9 = severe, and ≥10 = extremely severe; and for **Stress**, 0–7 = normal, 8–9 = mild, 10–12 = moderate, 13–16 = severe, and ≥17 = extremely severe. If direct comparison with the original 42-item DASS is desired, subscale scores may be multiplied by two; however, researchers may report the raw DASS-21 scores consistently throughout the study.

Tool IV: Brief COPE Inventory

The Brief COPE Inventory developed by **Carver, (1997)** was used to assess coping responses among women following the traumatic experience of emergency peripartum hysterectomy. The Brief COPE is a concise 28-item self-report measure consisting of 14 coping dimensions, with two items representing each coping strategy. The 14 dimensions are self-distraction, active coping, denial, substance use, use of emotional support, use of instrumental support, behavioral disengagement, venting, positive reframing, planning, humor, acceptance, religion, and self-blame. In the present study, the instrument was used to identify the coping strategies women employed in dealing with the emergency surgery, loss of fertility, fear of death, postoperative recovery, and psychological consequences of the experience. Each item is answered according to the extent to which the respondent has been using that coping response. The Brief COPE was developed specifically to reduce respondent burden while retaining a broad range of coping responses and has been used in health-related and trauma-related research.

Scoring: Each item is scored on a four-point response scale: 1 = I haven't been doing this at all, 2 = I've been doing this a little bit, 3 = I've been doing this a medium amount, and 4 = I've been doing this a lot. Each coping dimension is represented by two items, giving a score range of 2–8 for each coping strategy. Higher scores indicate greater use of that particular coping strategy. Because the Brief COPE measures distinct coping responses rather than one single unidimensional construct, it is preferable to analyze the 14 coping dimensions separately or combine theoretically justified adaptive and maladaptive coping categories rather than interpret a single total score.

Tool V: Multidimensional Scale of Perceived Social Support (MSPSS)

The **Multidimensional Scale of Perceived Social Support (MSPSS)** developed by **Zimet et al, (1988)** was used to assess the level of perceived social support available to women following emergency peripartum hysterectomy. The MSPSS is a brief **12-item** self-report scale assessing perceived support from three sources: **Family**, **Friends**, and **Significant Other**. Each dimension contains four items. In the context of the present study, the Significant Other dimension may include the husband/partner or another important person identified by the participant, while the Family and Friends dimensions assess perceived availability of emotional and practical support from those social networks. The scale is particularly relevant to women after emergency hysterectomy because family and partner support may influence psychological adjustment, coping, grief processing, and community reintegration. The original scale demonstrated a three-factor structure corresponding to family, friends, and significant other support and showed good internal and test-retest reliability.

Scoring: Each item is rated on a 7-point Likert scale, ranging from 1 = Very strongly disagree to 7 = Very strongly agree. The total score ranges from 12 to 84, with higher scores indicating greater perceived social support. Subscale scores are calculated separately for Family, Friends, and Significant Other, with each subscale ranging from 4 to 28. A commonly used interpretation is approximately 1.0–2.9 = low perceived support, 3.0–5.0 = moderate perceived support, and 5.1–7.0 = high

perceived support when using the mean score. These categories should be reported consistently with the selected scoring approach.

Tool VI: WHO-5 Psychological Well-being Index

The World Health Organization-Five Well-Being Index (WHO-5) was used to assess the psychological well-being of the studied participants. The WHO-5 is a brief self-report instrument developed by the World Health Organization to measure subjective psychological well-being during the previous two weeks. It focuses on positive dimensions of well-being rather than directly assessing psychological symptoms. The instrument has been widely used in clinical and research settings and has demonstrated satisfactory validity and reliability across different populations and cultural contexts **(World Health Organization [WHO], 2024; Topp et al., 2015).**

The WHO-5 consisted of five positively worded items addressing different aspects of psychological well-being during the preceding two weeks. These items assessed whether the participant had felt cheerful and in good spirits, calm and relaxed, active and vigorous, fresh and rested upon waking, and whether daily life had been filled with things that were interesting. Each item was answered according to the frequency with which the participant experienced the described feeling during the previous two weeks. The response options ranged from "All of the time" to "At no time," providing a simple and easily understood assessment of the participant's subjective well-being **(WHO, 2024).**

Each item was scored on a six-point Likert scale ranging from **0 to 5**, where "All of the time" was assigned a score of 5, "Most of the time" a score of 4, "More than half the time" a score of 3, "Less than half the time" a score of 2, "Some of the time" a score of 1, and "At no time" a score of 0. The scores of the five items were summed to obtain a raw total score ranging from **0 to 25**, with higher scores indicating a higher level of psychological well-being (WHO, 2024).

For interpretation, the raw WHO-5 score was multiplied by four to transform the score into a standardized percentage ranging from **0 to 100**, with higher scores indicating better psychological well-being. A standardized score below **50%**, corresponding to a raw score below 13, was considered indicative of reduced psychological well-being and suggested the need for further assessment. For the purposes of the present study, participants could therefore be classified into **poor psychological well-being (0–50%)** and **good psychological well-being (>50–100%)**, provided that these categories were identified as study-specific operational classifications rather than official WHO diagnostic categories **(WHO, 2024).**

The WHO-5 was administered to the studied participants at the specified assessment points of the study, including **before the intervention, immediately after the intervention, and at follow-up**, to evaluate changes in psychological well-being over time. The same scoring procedure was applied at each assessment point to ensure comparability of the results and to determine whether the nursing intervention was associated with improvement in participants' psychological well-being.

Regarding psychometric properties, the WHO-5 has demonstrated good validity and reliability in different populations. A systematic review of the literature found that the WHO-5 had strong clinimetric validity and was suitable for assessing subjective psychological well-being in both clinical and general populations. The instrument is also characterized by its brevity, simplicity, and ease of administration, making it appropriate for nursing research and intervention studies **(Topp et al., 2015).** In the present study, the reliability of the WHO-5 was assessed using the appropriate reliability coefficient, such as **Cronbach's alpha**, based on the responses of the studied participants.

Tool VII: Researcher-Developed Psychological Adjustment and Self-Care Recovery Scale Following Emergency Peripartum Hysterectomy

A **Researcher-Developed Psychological Adjustment and Self-Care Recovery Scale** was used to assess women's adaptation to the consequences of emergency peripartum hysterectomy and their ability to manage recovery after discharge. The scale was developed after reviewing literature **Rehan et al, (2023); Ferhi et al, (2024); Gahlawat et al, (2024)** related to emergency peripartum hysterectomy, reproductive loss, postoperative recovery, psychological adjustment, and community-based nursing care. It consisted of two main domains. **Domain I: Psychological Adjustment** included items assessing acceptance of the hysterectomy, ability to express feelings about fertility loss, adjustment

to altered reproductive status, body-image acceptance, reduction of guilt and self-blame, emotional stability, confidence in the future, ability to communicate feelings with family, willingness to seek psychological support, and acceptance of the need for continued follow-up. **Domain II: Self-Care and Recovery** included wound-care practices, medication adherence, nutrition and hydration, rest and sleep, gradual physical activity, personal hygiene, recognition of postoperative danger signs, attendance at follow-up appointments, adherence to medical/nursing recommendations, use of coping and relaxation techniques, and appropriate help-seeking behavior. The tool was reviewed by experts in obstetric nursing, medical-surgical nursing, psychiatric/mental-health nursing, and obstetrics and gynecology to establish content validity. A pilot study was conducted before the main study to evaluate clarity, feasibility, and internal consistency.

Scoring: Each item is rated on a three-point Likert scale, where 2 = Always/Completely achieved, 1 = Sometimes/Partially achieved, and 0 = Never/Not achieved, with negatively worded items reverse scored where applicable. For each domain, item scores are summed to obtain a domain-specific score, while the overall score is obtained by summing all items. Higher scores indicate better psychological adjustment and stronger self-care/recovery. For interpretation, the total percentage score may be classified as ≥75% = good adjustment/self-care, 60–<75% = moderate adjustment/self-care, and <60% = poor adjustment/self-care. Because this scale is researcher-developed, these cutoffs should be explicitly described as study-specific operational categories, and its validity and reliability should be established before the main data collection.

Tool VIII: Maternal–Infant Bonding, Infant Care Competence and Pediatric Well-Being Assessment Scale (WHO, 2022).

1. **Mother–infant bonding**
    1. affectionate interaction
    2. eye contact
    3. holding and comforting the infant
    4. responsiveness to infant cues
2. **Maternal competence in infant care**
    1. breastfeeding/feeding
    2. cord care
    3. bathing and hygiene
    4. temperature monitoring
    5. safe sleeping
    6. medication administration when prescribed
    7. recognition of danger signs
3. **Pediatric/newborn well-being**
    1. feeding adequacy
    2. sleep pattern
    3. crying/comfort
    4. weight monitoring
    5. immunization adherence
    6. recognition of illness or danger signs.

Scoring System of the Maternal–Infant Bonding, Infant Care Competence and Pediatric Well-Being Assessment Scale

The researcher-developed scale was scored according to the participants' responses across three domains: maternal–infant bonding, infant-care competence, and pediatric well-being. Each item was scored using a three-point response scale, where 2 = always/appropriate response, 1 = sometimes/partially appropriate response, and 0 = never/inappropriate response. Higher scores indicated better maternal–infant bonding, greater competence in infant care, and more favorable pediatric well-being.

Interpretation

- **Maternal–Infant Bonding**
    - **Poor:** 0–9 (<50%)
    - **Moderate:** 10–14 (50–<75%)
    - **Good:** 15–20 (≥75%)
- **Infant Care Competence**
    - **Unsatisfactory:** <18 (<60%)
    - **Satisfactory:** 18–30 (≥60%)
- **Pediatric Well-Being**
    - **Unsatisfactory:** <12 (<60%)
    - **Satisfactory:** 12–20 (≥60%)

Total score: The overall score ranges from **0 to 70**, with higher scores indicating better maternal–infant bonding, greater infant-care competence, and better pediatric well-being.

Validity

The validity of the study tools was established to ensure that they appropriately measured the intended study variables. Tool I: Structured Sociodemographic and Clinical Assessment

Sheet and Tool V: Maternal Self-Care and Postoperative Recovery Assessment Scale, which were developed by the researchers, were submitted to a panel of five experts in maternal and newborn health nursing, psychiatric and mental health nursing, medical-surgical nursing, pediatric nursing and obstetrics and gynecology. The experts assessed the tools for relevance, clarity, comprehensiveness, appropriateness, and suitability for the studied women. Their suggestions were considered, and necessary modifications were made before the final data collection. The standardized instruments, including the PCL-5, WHO-5, Brief COPE, and MSPSS, were selected because they are established instruments with documented psychometric properties in previous research. Their original constructs and scoring systems were retained during the study.

Reliability

The reliability of the study tools was assessed to determine their internal consistency and stability in measuring the intended constructs. Cronbach's alpha coefficient was calculated for the tools. The reliability coefficients were considered acceptable when they reached the generally accepted level of 0.80.

Pilot Study

A pilot study was conducted on 10% of the calculated study sample (10 women) who fulfilled the same inclusion criteria as the main study sample. The pilot study was carried out before the beginning of the main data collection to assess the clarity, comprehensibility, feasibility, and applicability of the study tools and to estimate the time required for completing each assessment. The pilot study also helped identify any ambiguous or difficult items, evaluate the feasibility of the planned nursing intervention and follow-up procedures, and determine whether any modifications were required. Necessary modifications were made before implementation of the final study protocol. The women who participated in the pilot study were excluded from the final study sample to avoid possible contamination from previous exposure to the study procedures.

Ethical Considerations

Before conducting the study, official approval was obtained from the Scientific Research Ethics Committee (No: 119/ 2025) of the Faculty of Nursing, Sohag University, as well as permission from the relevant administrative authorities of Sohag University Hospitals. Each eligible woman was informed about the purpose, procedures, expected benefits, and possible inconveniences associated with participation. Written informed consent was obtained from every participant before data collection. Participation was completely voluntary, and each woman was informed that she had the right to refuse participation or withdraw from the study at any time without affecting the medical or nursing care she received. Confidentiality and privacy were maintained throughout the study. Each participant was assigned a code number instead of using her name on the research forms. Data were kept confidential and were used solely for scientific research purposes.

Phases of the Multidisciplinary Nursing Intervention

The multidisciplinary nursing intervention was designed to provide continuous, individualized care from the operating-theatre/hospital period through discharge and home/community follow-up. The intervention focused on reducing PTSD symptoms and promoting psychological well-being, postoperative self-care and recovery, adaptive coping, maternal functioning, and perceived social support. The intervention was delivered through 8 sessions over 4 weeks, followed by a structured follow-up assessment.

Phase I: Assessment and Preparation

Duration: 1 session, approximately **45–60 minutes**

Session 1: Initial Assessment and Therapeutic Preparation

This session was conducted after the woman became medically stable following emergency surgical peripartum hysterectomy.

The researcher:

- Established therapeutic communication and created a supportive environment.
- Explained the purpose and components of the nursing intervention.
- Assessed the woman's understanding of her surgical experience and current concerns.
- Assessed PTSD symptoms, depressive symptoms, psychological well-being, self-

care, coping, maternal functioning, and social support using the study tools.
- Identified individual physical, psychological, social, and maternal needs.
- Introduced the concept of recovery following emergency hysterectomy.
- Explained that emotional reactions following a life-threatening obstetric event can occur and that seeking support is appropriate.
- Established individualized goals for the subsequent intervention.
- Maternal nursing + psychological first aid.

Phase II: Hospital-Based Nursing Intervention

Duration: 3 sessions, approximately **45–60 minutes per session**

Session 2: Postoperative Self-Care and Physical Recovery

This session focused on strengthening the woman's ability to manage her postoperative recovery.

Content included:

- Wound and incision care.
- Hand hygiene and infection-prevention measures.
- Medication adherence.
- Pain assessment and appropriate pain-management strategies.
- Adequate nutrition and hydration.
- Gradual mobilization and physical activity.
- Rest and sleep.
- Prevention of constipation and other common postoperative problems.
- Recognition of postoperative warning signs.
- Importance of scheduled medical follow-up.
- Practical demonstrations and return demonstrations were used when appropriate.
- Pediatric nurses provide education and practical training concerning newborn/infant care, breastfeeding, mother–infant interaction, recognition of pediatric danger signs, and strengthening maternal caregiving confidence.

Session 3: Understanding Trauma and Managing PTSD Symptoms

This session focused on psychological recovery following the emergency obstetric experience.

The woman was provided with individualized psychoeducation regarding:

- The meaning of traumatic childbirth.
- Common emotional responses following life-threatening obstetric events.
- PTSD symptoms and their four major symptom clusters.
- Intrusive memories and distressing thoughts.
- Avoidance behaviors.
- Negative emotional and cognitive reactions.
- Hyperarousal and sleep difficulties.
- Recognition of persistent or worsening symptoms.

The nurse taught simple strategies for managing distress, including controlled breathing, grounding techniques, relaxation, identification of triggers, and seeking professional support when symptoms became difficult to manage.

Session 4: Depression, Psychological Well-Being, and Emotional Adjustment

This session aimed to promote emotional recovery and psychological well-being.

Content included:

- Recognition of depressive symptoms.
- Emotional expression and communication.
- Positive daily activities.
- Relaxation and stress-management techniques.
- Establishing realistic daily goals.
- Sleep hygiene.
- Maintaining supportive relationships.
- Avoiding social withdrawal.
- Encouraging help-seeking when psychological symptoms persisted or intensified.
- The nurse emphasized that emotional recovery following emergency hysterectomy may require time and continued support.

Phase III: Discharge Preparation and Maternal Reintegration

Duration: 2 sessions, approximately **45–60 minutes per session**

Session 5: Coping Skills and Resilience

This session focused on strengthening adaptive coping strategies.

Women were trained to:

- Identify current sources of stress.
- Recognize personal coping patterns.
- Use active coping and problem-solving.
- Practice positive reframing.
- Develop realistic short-term goals.
- Seek emotional and instrumental support.
- Use relaxation and breathing exercises.
- Accept emotions associated with the traumatic experience.
- Reduce maladaptive avoidance and behavioral disengagement.
- Identify situations requiring professional assistance.
- Joint maternal–pediatric nursing education before discharge.

The nurse encouraged each woman to develop an individualized coping plan for situations likely to trigger distress after discharge.

Session 6: Maternal Functioning and Social Reintegration

This session addressed the woman's adaptation to motherhood and resumption of family and social roles.

The session included:

- Gradual resumption of maternal activities according to physical recovery.
- Balancing maternal responsibilities with self-care.
- Building confidence in maternal functioning.
- Communication with the infant and family.
- Managing fatigue and activity demands.
- Identifying available family and community resources.
- Strengthening communication with the spouse/family.
- Encouraging appropriate social participation.
- Addressing feelings related to loss of fertility and altered reproductive expectations in a supportive manner.
- Family members or caregivers were involved when appropriate and with the woman's consent.

Phase IV: Home/Community-Based Continuity of Care

Duration: 2 sessions, approximately **30–45 minutes per session**

Session 7: Home Follow-Up and Reinforcement

A home/community follow-up session was conducted after discharge to assess the woman's progress in her natural environment.

The nurse:

- Reviewed postoperative self-care practices.
- Assessed wound condition and recovery-related concerns.
- Reinforced medication adherence and follow-up attendance.
- Reviewed PTSD and depressive symptoms.
- Reinforced relaxation and coping strategies.
- Assessed maternal functioning.
- Identified barriers to recovery.
- Assessed available family and social support.
- Provided individualized feedback and reinforcement.

Any concerning physical or psychological findings were addressed through appropriate referral according to the available healthcare pathway.

Session 8: Consolidation, Relapse Prevention, and Continued Support

The final intervention session focused on maintaining the achieved improvements.

Content included:

- Review of previously learned self-care skills.
- Review of effective coping strategies.
- Reinforcement of psychological well-being practices.
- Identification of early warning signs of worsening PTSD or depressive symptoms.
- Development of an individualized plan for managing future emotional triggers.
- Reinforcement of social and family support.
- Encouragement of continued maternal and social functioning.
- Emphasis on continuing appropriate medical and psychological follow-up.

- Answering participants' questions and correcting misconceptions.
- Conduct home visits to reinforce PTSD coping, postoperative self-care, infant care, breastfeeding, maternal–infant bonding, family support, and referral when maternal or child problems are identified.

Duration of the Intervention

The complete nursing intervention was implemented over **4 consecutive weeks**, with **8 structured sessions**:

Phase	Session	Main Content	Duration
Phase I	1	Initial assessment and preparation	45–60 min
Phase II	2	Postoperative self-care and physical recovery	45–60 min
	3	Trauma and PTSD management	45–60 min
	4	Depression and psychological well-being	45–60 min
Phase III	5	Coping skills and resilience	45–60 min
	6	Maternal functioning and social reintegration	45–60 min
Phase IV	7	Home/community follow-up and reinforcement	30–45 min
	8	Consolidation and relapse prevention	30–45 min

Follow-up Assessment

After completion of the intervention, the participants were reassessed using the study tools to determine immediate changes in PTSD symptoms and the secondary outcomes. A **follow-up assessment was subsequently conducted after the predetermined follow-up period** to evaluate whether the observed improvements were maintained.

Statistical Analysis

The collected data were coded, tabulated, and statistically analyzed using the Statistical Package for the Social Sciences (SPSS), version 26. Descriptive statistics were used to summarize the studied women's sociodemographic and clinical characteristics in the form of frequencies, percentages, means, and standard deviations. The reliability of the study tools was assessed using Cronbach's alpha coefficient where applicable. For comparison of the studied women's outcomes across the three assessment periods (pre-intervention, post-intervention, and follow-up), repeated-measures analysis of variance (Repeated-Measures ANOVA) was used for normally distributed continuous variables, with appropriate post-hoc comparisons when significant differences were detected. For non-normally distributed continuous variables, the appropriate non-parametric alternative, such as the Friedman test, was applied. Changes in categorical outcomes across the three assessment periods were analyzed using the appropriate test for related categorical data, such as the marginal homogeneity test. Pearson's correlation coefficient was used, as appropriate, to examine relationships between PTSD symptoms and psychological well-being, depressive symptoms, self-care and postoperative recovery, coping, maternal functioning, and perceived social support. The level of statistical significance was set at **$p < 0.05$**, while **$p < 0.001$** was considered highly statistically significant. Results were presented in tables and figures as appropriate.

Results:

Table (1): Distribution of the Studied Women According to Their Sociodemographic Characteristics (N = 100)

Sociodemographic characteristics	No.	%
Age (years)		
<25	18	18.0
25–<35	52	52.0
≥35	30	30.0
Residence		
Rural	63	63.0
Urban	37	37.0
Marital status		
Married	96	96.0
Widowed	4	4.0
Educational level		
Illiterate	20	20.0
Basic/secondary education	54	54.0
University education	26	26.0
Occupation		
Housewife	78	78.0
Working	22	22.0

Sociodemographic characteristics	No.	%
Family income		
Insufficient	57	57.0
Sufficient	43	43.0

Table (1) shows that more than half of the studied women (52.0%) were aged 25–<35 years, while 30.0% were aged ≥35 years and 18.0% were younger than 25 years. Regarding residence, nearly two-thirds of the women (63.0%) were from rural areas compared with 37.0% from urban areas. Concerning marital status, the vast majority of the studied women were married (96.0%), whereas only 4.0% were widowed. Regarding educational level, more than half (54.0%) had basic or secondary education, 26.0% had university education, and 20.0% were illiterate. Regarding occupation, the majority of the women were housewives (78.0%), while only 22.0% were working women. More than half of the studied women (57.0%) reported insufficient family income.

Table (2): Distribution of the Studied Women According to Their Obstetric and Clinical Characteristics (N = 100)

Obstetric and clinical characteristics	No.	%
Gravidity		
Primigravida	12	12.0
Multigravida	88	88.0
Parity		
Primipara	15	15.0
Multipara	85	85.0
Previous cesarean sections		
None	28	28.0
1–2	46	46.0
≥3	26	26.0
History of previous postpartum hemorrhage		
Yes	19	19.0
No	81	81.0
Indication for emergency hysterectomy		
Placenta accreta spectrum	42	42.0
Uterine atony	25	25.0
Uterine rupture	18	18.0
Placental abruption/other causes	15	15.0
Blood transfusion		
Yes	91	91.0
No	9	9.0
ICU admission		
Yes	37	37.0
No	63	63.0

Table (2) demonstrates that the majority of the studied women were multigravida (88.0%) and multipara (85.0%). Nearly half of the women (46.0%) had experienced one or two previous cesarean sections, while 26.0% had undergone three or more previous cesarean sections. Regarding previous postpartum hemorrhage, 19.0% reported a previous history, whereas 81.0% did not. Placenta accreta spectrum was the most frequently reported indication for emergency hysterectomy (42.0%), followed by uterine atony (25.0%) and uterine rupture (18.0%). The table also reveals that 91.0% of the studied women required blood transfusion, reflecting the severity of hemorrhage associated with the emergency surgical event. Furthermore, 37.0% required ICU admission, indicating that a considerable proportion experienced substantial clinical instability around the time of surgery.

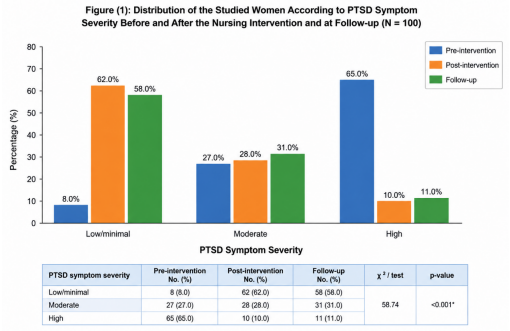


Figure (1): Distribution of the Studied Women According to PTSD Symptom Severity Before and After the Nursing Intervention and at Follow-up (N = 100)

Figure (1) demonstrates a marked improvement in PTSD symptom severity following implementation of the multidisciplinary nursing intervention. Before the intervention, the majority of women (**65.0%**) had high PTSD symptom severity, while only 8.0% had low/minimal symptoms. After the intervention, the proportion of women with high PTSD symptom severity decreased substantially from **65.0% to 10.0%**, while the proportion with low/minimal symptoms increased from **8.0% to 62.0%**. At follow-up, the improvement was largely maintained, with 58.0% of women having low/minimal symptoms and only 11.0% having high symptom severity.

Table (3): Comparison of Mean PTSD Symptom Scores among the Studied Women Before, After the Intervention, and at Follow-up (N = 100)

PTSD symptom score	Pre-intervention	Post-intervention	Follow-up	Test	p-value
Mean ± SD	52.6 ± 10.8	± 28.4 9.2	± 30.1 ± 9.6	F = 96.42	<0.001 ***

Table (3) shows a substantial reduction in the mean PTSD symptom score following implementation of the nursing intervention. The mean score decreased from **52.6 ± 10.8 before the intervention to 28.4 ± 9.2 immediately after the intervention**. Although a slight increase was observed at follow-up (**30.1 ± 9.6**), the mean score remained considerably lower than the baseline value. The repeated-measures comparison demonstrated a **highly statistically significant difference (F = 96.42, p < 0.001)** across the three assessment periods.

Table (4): Distribution of the Studied Women According to Depression, Anxiety, and Stress Levels Before, After the Intervention, and at Follow-up (N = 100)

Psychological Dimension	Level	Before Intervention No. (%)	After Intervention No. (%)	Follow-up No. (%)
Depression	Normal (0–4)	10 (10.0)	65 (65.0)	62 (62.0)
	Mild (5–6)	12 (12.0)	15 (15.0)	16 (16.0)
	Moderate (7–10)	25 (25.0)	12 (12.0)	13 (13.0)
	Severe (11–13)	23 (23.0)	5 (5.0)	6 (6.0)
	Extremely severe (≥14)	30 (30.0)	3 (3.0)	3 (3.0)
	Total	**100 (100.0)**	**100 (100.0)**	**100 (100.0)**
Anxiety	Normal (0–3)	8 (8.0)	60 (60.0)	58 (58.0)
	Mild (4–5)	10 (10.0)	18 (18.0)	19 (19.0)
	Moderate (6–7)	18 (18.0)	12 (12.0)	13 (13.0)
	Severe (8–9)	24 (24.0)	7 (7.0)	7 (7.0)
	Extremely severe (≥10)	40 (40.0)	3 (3.0)	3 (3.0)
	Total	**100 (100.0)**	**100 (100.0)**	**100 (100.0)**
Stress	Normal (0–7)	12 (12.0)	68 (68.0)	65 (65.0)
	Mild (8–9)	15 (15.0)	14 (14.0)	16 (16.0)
	Moderate (10–12)	25 (25.0)	10 (10.0)	11 (11.0)
	Severe (13–16)	23 (23.0)	5 (5.0)	5 (5.0)
	Extremely severe (≥17)	25 (25.0)	3 (3.0)	3 (3.0)
	Total	**100 (100.0)**	**100 (100.0)**	**100 (100.0)**

Table 4 demonstrates a marked improvement in the psychological status of the studied women following the intervention. Regarding **depression**, the proportion with normal scores increased from **10.0% before the intervention to 65.0% after the intervention**, while extremely severe depression decreased from **30.0% to 3.0%**. This improvement was largely maintained at follow-up, with **62.0%** classified as normal and only **3.0%** as extremely severe.

Regarding **anxiety**, normal levels increased from **8.0% before the intervention to 60.0% after the intervention**, whereas extremely severe anxiety declined substantially from **40.0% to 3.0%**. At follow-up, the proportion with

normal anxiety remained high at **58.0%**, while extremely severe anxiety remained low at **3.0%**.

Regarding **stress**, the proportion of women with normal stress increased from **12.0% before the intervention to 68.0% after the intervention**, while extremely severe stress decreased from **25.0% to 3.0%**. At follow-up, **65.0%** of the women remained within the normal range, and extremely severe stress remained at **3.0%**. Overall, the findings indicate a substantial shift from moderate-to-extremely severe psychological distress toward normal or mild levels after the intervention, with most of the improvement sustained at follow-up.

Table (5): Comparison of WHO-5 Psychological Well-being levels Before, After the Intervention, and at Follow-up (N = 100)

WHO-5 Psychological Well-being Level	Before Intervention No. (%)	After Intervention No. (%)	Follow-up No. (%)
Poor (0–50%)	72 (72.0)	14 (14.0)	17 (17.0)
Good (>50–100%)	28 (28.0)	86 (86.0)	83 (83.0)
Total	**100 (100.0)**	**100 (100.0)**	**100 (100.0)**
Statistical test		**χ^2 = 68.42, p < 0.001**	**χ^2 = 61.37, p < 0.001**

Table (5) illustrates the comparison of WHO-5 psychological well-being levels among women undergoing emergency surgical peripartum hysterectomy before, after the multidisciplinary nursing intervention, and at follow-up. Before the intervention, the majority of the studied women **72 (72.0%)** had poor psychological well-being, whereas only **28 (28.0%)** had good psychological well-being. After implementation of the multidisciplinary nursing intervention, a marked improvement was observed, with the proportion of women having good psychological well-being increasing to **86 (86.0%)**, while those with poor psychological well-being decreased to **14 (14.0%)**. At follow-up, the improvement was largely maintained, as **83 (83.0%)** of women had good psychological well-being compared with **17 (17.0%)** who had poor psychological well-being. The observed differences were statistically significant (**p < 0.001**), indicating substantial improvement in psychological well-being following the intervention, with the beneficial effect maintained during follow-up.

Table 6: Distribution of the Studied Women According to Coping Level Before, After the Multidisciplinary Nursing Intervention, and at Follow-up (N = 100)

Coping Level	Before Intervention No. (%)	After Intervention No. (%)	Follow-up No. (%)
Adaptive coping	30 (30.0)	82 (82.0)	79 (79.0)
Maladaptive coping	70 (70.0)	18 (18.0)	21 (21.0)
Total	**100 (100.0)**	**100 (100.0)**	**100 (100.0)**

Table 6 demonstrates a marked improvement in the coping patterns of the studied women following implementation of the multidisciplinary nursing intervention. **Before the intervention, 70.0%** of the women demonstrated maladaptive coping, whereas only **30.0%** demonstrated adaptive coping, indicating that maladaptive coping strategies predominated during the immediate postoperative period. Following the intervention, a substantial improvement was observed, with the proportion of women demonstrating **adaptive coping increasing to 82.0%**, while maladaptive coping decreased to **18.0%**. At follow-up, the improvement was largely maintained, as **79.0%** of the women continued to demonstrate adaptive coping compared with **21.0%** who demonstrated maladaptive coping. Overall, the findings indicate a shift from predominantly maladaptive toward more adaptive coping strategies after the multidisciplinary nursing intervention, with the improvement sustained during follow-up.

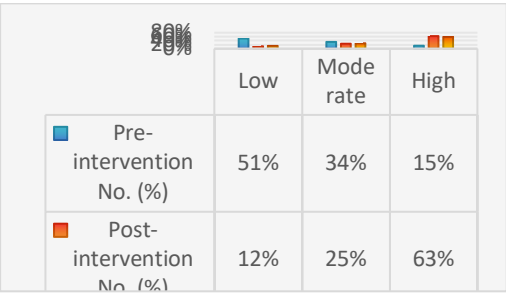


Figure (2): Distribution of the Studied Women According to Perceived Social

Support Before, After the Intervention, and at Follow-up (N = 100)

Figure (2) demonstrates a substantial improvement in perceived social support. Before the intervention, more than half of the women (**51.0%**) reported low social support, while only 15.0% reported high social support. After implementation of the intervention, high perceived social support increased to **63.0%**, whereas low support decreased to **12.0%**. At follow-up, high perceived support remained at 59.0%, while low support was maintained at a relatively low level of 14.0%.

Table (7): Distribution of the Studied Women According to Postoperative Self-Care and Recovery Before, After the Multidisciplinary Nursing Intervention, and at Follow-up (N = 100)

Postoperative Self-Care and Recovery Level	Before Intervention No. (%)	After Intervention No. (%)	Follow-up No. (%)
Poor (<60%)	72 (72.0)	12 (12.0)	15 (15.0)
Moderate (60–<75%)	20 (20.0)	18 (18.0)	17 (17.0)
Good (≥75%)	8 (8.0)	70 (70.0)	68 (68.0)
Total	**100 (100.0)**	**100 (100.0)**	**100 (100.0)**

Table (7) shows that before implementation of the multidisciplinary nursing intervention, the majority of the studied women 72 (72.0%) had poor postoperative self-care and recovery, while only 8 (8.0%) demonstrated good self-care and recovery. Following the intervention, a marked improvement was observed, as the proportion of women with good postoperative self-care and recovery increased to 70 (70.0%), whereas the proportion with poor self-care and recovery decreased to 12 (12.0%). At follow-up, the improvement was largely maintained, with 68 (68.0%) of the studied women classified as having good postoperative self-care and recovery and 15 (15.0%) classified as poor. These findings indicate sustained improvement in postoperative self-care and recovery following the multidisciplinary nursing intervention.

Table (8): Distribution of the Studied Women According to Maternal–Infant Bonding, Infant Care Competence, and Pediatric Well-Being Before, After the Intervention, and at Follow-up (N = 100)

Assessment domains	Pre-intervention No. (%)	Post-intervention No. (%)	Follow-up No. (%)	χ^2	P-value
Maternal–Infant Bonding					
Poor	48 (48.0)	8 (8.0)	10 (10.0)		
Moderate	34 (34.0)	17 (17.0)	18 (18.0)		
Good	18 (18.0)	75 (75.0)	72 (72.0)	**68.42**	**<0.001***
Infant Care Competence					
Unsatisfactory	63 (63.0)	11 (11.0)	14 (14.0)		
Satisfactory	37 (37.0)	89 (89.0)	86 (86.0)	**61.74**	**<0.001***
Pediatric Well-Being					
Unsatisfactory	55 (55.0)	12 (12.0)	15 (15.0)		
Satisfactory	45 (45.0)	88 (88.0)	85 (85.0)	**57.26**	**<0.001***

Table 8 shows a marked improvement in all assessed domains following implementation of the multidisciplinary maternal–pediatric–community nursing intervention. Regarding maternal–infant bonding, the proportion of mothers with good bonding increased from 18.0% before the intervention to 75.0% after the intervention, with a slight decrease to 72.0% at follow-up, while poor bonding decreased from 48.0% to 8.0% and remained low at follow-up (10.0%). Similarly, satisfactory infant-care competence increased from 37.0% pre-intervention to 89.0% post-intervention and remained high at follow-up (86.0%). Regarding pediatric well-being, satisfactory status increased from 45.0% to 88.0% after the

intervention and remained at 85.0% at follow-up.

Table (9): Correlation between PTSD Symptoms and Selected Outcomes among the Studied Women at Post-intervention Assessment (N = 100)

Variables	PTSD symptoms	
	r	p-value
Depressive symptoms	0.64**	<0.001
Psychological well-being	-0.59**	<0.001
Self-care/recovery	-0.48**	<0.001
Adaptive coping	-0.52**	<0.001
Maternal functioning	-0.46**	<0.001
Perceived social support	-0.43**	<0.001

**** Correlation is significant at p < 0.01.**

Table (9) demonstrates significant relationships between PTSD symptoms and the major psychological and functional outcomes following the intervention. PTSD symptoms showed a positive correlation with depressive symptoms ($r = 0.64$, $p < 0.001$). Conversely, PTSD symptoms showed significant negative correlations with psychological well-being, self-care and recovery, adaptive coping, maternal functioning, and perceived social support ($p < 0.001$).

Discussion:

The present study revealed that the studied women who underwent emergency surgical peripartum hysterectomy experienced a considerable psychological burden before implementation of the multidisciplinary nursing intervention. The majority of women demonstrated high levels of post-traumatic stress symptoms before the intervention, which was expected given the emergency and potentially life-threatening circumstances surrounding peripartum hysterectomy. This finding was consistent with **de la Cruz et al. (2026),** who reported that women experiencing emergency peripartum hysterectomy were significantly more likely to screen positive for PTSD than women who did not undergo the procedure. Similarly, **Ayers et al. (2024)** emphasized that traumatic childbirth experiences, particularly those involving emergency obstetric interventions, loss of control, and perceived threat to life, increase vulnerability to post-traumatic stress symptoms. The current finding was also consistent with qualitative evidence showing that women following emergency peripartum hysterectomy may experience loss of womanhood, emotional distress, and concerns regarding marital and maternal identity **(Pilli et al., 2020).** These findings highlight that ESPH should not be considered solely a life-saving surgical procedure but also a potentially traumatic reproductive and psychological event requiring integrated postoperative care.

The present study demonstrated a statistically significant reduction in PTSD symptom severity following implementation of the multidisciplinary nursing intervention, with the mean PCL-5 score decreasing from 52.6 ± 10.8 before the intervention to 28.4 ± 9.2 after the intervention and remaining relatively low at follow-up (30.1 ± 9.6), with a highly statistically significant difference across the three measurements. This finding was in agreement with the systematic review and meta-analysis conducted by **Lee et al. (2022),** which demonstrated that trauma-focused psychological interventions could significantly reduce post-traumatic stress symptoms among women following childbirth, particularly during the short- and medium-term postpartum periods. The current result may be explained by the multidisciplinary structure of the intervention, which combined psychological support, trauma education, coping strategies, postoperative self-care, maternal functioning, and continuity of support after discharge. The persistence of improvement at follow-up further suggests that extending nursing care beyond the hospital may have reinforced the benefits of the intervention. However, the present study differed from previous trauma-focused intervention studies because the intervention was specifically designed for women following ESPH and incorporated nursing care from the operating-theatre/postoperative pathway through home and community follow-up rather than focusing exclusively on psychological therapy.

The present study showed a marked improvement in the psychological status of the studied women following the intervention. This finding was consistent with the systematic review by **Stein Elger et al., (2025)**, which identified a consistent relationship between social support and improved postpartum psychosocial conditions, including lower postpartum depressive symptoms. It was also compatible with evidence indicating that traumatic birth experiences may increase vulnerability to depression and other postpartum psychological difficulties. The improvement observed in the present study may

be attributed to early identification of psychological distress, supportive communication, psychoeducation, coping enhancement, and continuous follow-up. In contrast, some previous studies have reported persistent depressive symptoms in women exposed to severe obstetric complications, suggesting that psychological recovery may not occur spontaneously without targeted support. Therefore, the current findings emphasize the importance of incorporating depression screening and psychological support into the postoperative care pathway for women following ESPH.

The present study also demonstrated a significant improvement in psychological well-being, as reflected by the increase in the mean WHO-5 score after the intervention. This finding was consistent with **Domenech et al., (2025),** who concluded that adequate social and psychosocial support during the postpartum period was positively associated with healthier psychological conditions and better quality of life. The improvement in well-being in the current study may have resulted from addressing several dimensions simultaneously rather than treating PTSD as an isolated psychological problem. The intervention provided emotional support, education, coping strategies, self-care guidance, and continued home/community contact, which may have helped women regain a sense of safety, control, and confidence following the traumatic surgical experience. The relatively maintained improvement at follow-up also supports the importance of continuity of care during the transition from hospital to home.

The present study showed a significant a marked improvement in the coping patterns of the studied women following implementation of the multidisciplinary nursing intervention, whereas after the intervention most women demonstrated adaptive coping, and this improvement was maintained at follow-up. This finding can be explained by the intervention's emphasis on active coping, positive reframing, problem solving, emotional expression, acceptance, and mobilization of available sources of support. The finding was consistent with **Atya et al., (2022),** who conceptualized social support as an important coping resource during the postpartum period and emphasized empowerment, help-seeking behavior, and peer or interpersonal support as mechanisms through which women may improve adaptation and self-management.

Regarding perceived social support, the present study revealed a marked increase in the proportion of women reporting high social support after the intervention. This finding was consistent with the systematic review of **Wang et al., (2023)**, which found evidence across reviewed studies that social support was positively associated with healthier postpartum psychosocial conditions, including better mental health and quality of life. The improvement observed in the current study may reflect the intervention's focus on identifying available support systems, strengthening communication with family members and significant others, facilitating help-seeking, and maintaining nurse contact after discharge. Importantly, the finding suggests that nursing intervention may influence not only individual psychological symptoms but also women's ability to recognize and utilize available social resources. Nevertheless, the small decrease in high social support at follow-up may indicate that maintaining perceived support requires ongoing family and community involvement rather than relying solely on short-term professional intervention.

With regard to maternal self-care and postoperative recovery, the present study found following the intervention, a marked improvement was observed, as the proportion of women with good postoperative self-care and recovery increased. This result was consistent with **WHO , (2022), which** the principle of continuity and client-centered postpartum care emphasized in contemporary postpartum care recommendations, which recognize the need for women to receive information, emotional support, physical recovery guidance, and appropriate follow-up beyond the immediate hospital period. The improvement may be explained by the intervention's practical components addressing wound care, medication and pain management, nutrition, hydration, mobility, warning signs, follow-up, and maternal functioning. The result also suggests that psychological recovery and physical self-management may be interconnected, because reducing fear and improving coping can facilitate women's engagement in postoperative care. Conversely, the relatively small decline at follow-up indicates that some women may continue to experience physical or emotional challenges after discharge, supporting the need for sustained reinforcement rather than a hospital-only intervention.

The present study demonstrated a substantial improvement in maternal–infant bonding following implementation of the

multidisciplinary maternal–pediatric–community nursing intervention. The proportion of mothers with good bonding increased after the intervention and remained relatively high at 72.0% during follow-up, while poor bonding decreased . This improvement may be attributed to the intervention's emphasis on psychological support, responsive interaction, maternal confidence, and opportunities for mothers to participate actively in infant care. These findings are consistent with **Wittkowski et al. (2020)**, who emphasized that parent–infant bonding represents an important aspect of the early parent–infant relationship and that appropriate assessment can identify difficulties requiring support. Similarly, **Nakić Radoš et al. (2024)** highlighted the importance of positive emotional connection and maternal responsiveness in establishing parent–infant bonding.

Regarding **infant-care competence**, the table showed a marked increase in the proportion of mothers with satisfactory competence after the intervention and maintaining satisfactory competence at follow-up. This improvement may reflect the pediatric nursing component of the intervention, which provided mothers with practical education and reinforcement regarding feeding, hygiene, cord care, safe sleep, recognition of infant danger signs, and appropriate responses to infant needs. The persistence of improvement at follow-up suggests that repeated education and community-based reinforcement may have helped mothers retain and apply the acquired skills. This finding is in agreement with **Li et al., (2022)** recommendations emphasizing maternal and newborn education, responsive caregiving, breastfeeding support, recognition of newborn danger signs, and continuity of postnatal care to promote a positive postnatal experience.

Concerning **pediatric well-being**, satisfactory status increased after the intervention and remained high during follow-up. This improvement may be related to the combination of maternal education, improved caregiving competence, breastfeeding and feeding support, early recognition of infant health problems, and appropriate referral during home and community follow-up. Since infant well-being is closely connected with the quality and responsiveness of caregiving, improving maternal knowledge and confidence may contribute to better day-to-day care practices. The findings are consistent with the **Ouyang et al., (2023)** guideline emphasizing nurturing care, responsive caregiving, and appropriate health and developmental support during early childhood.

The present study also demonstrated significant relationships between PTSD symptoms and the other psychological and functional outcomes after the intervention. PTSD symptoms were positively correlated with depressive symptoms and negatively correlated with psychological well-being, self-care, adaptive coping, maternal functioning, and perceived social support. These findings were consistent with previous evidence indicating that postpartum PTSD is associated with broader psychological and psychosocial difficulties rather than representing an isolated condition. **Ayers et al. (2024)** emphasized the multidimensional nature of childbirth-related PTSD and its relationship with psychological vulnerability and the subjective experience of childbirth. Similarly, **Huffhines et al. (2022)** reported that maternal PTSD during the perinatal period could have consequences extending beyond maternal psychological health. The inverse relationship between PTSD and social support was particularly consistent with the findings of **Khademi and Kaveh (2024)**, who reported that lower social support was associated with poorer postpartum psychosocial outcomes. These findings support the rationale for a multidisciplinary nursing intervention addressing PTSD together with depression, well-being, coping, self-care, maternal functioning, and social support.

Overall, the findings of the present study supported the effectiveness of a multidisciplinary nursing approach that extended from the immediate postoperative period to home and community follow-up. The simultaneous improvement in PTSD symptoms, depressive symptoms, psychological well-being, self-care, coping, maternal functioning, and perceived social support suggests that recovery following ESPH is multidimensional and requires more than routine surgical care. This interpretation is supported by evidence that trauma-focused interventions can reduce postpartum PTSD symptoms and by research emphasizing the importance of social support and continuity of care in postpartum psychological recovery **(Chen et al., 2024; Khademi & Kaveh, 2024).** Nevertheless, because the present study used a one-group quasi-experimental design without a control group, the observed improvements should be interpreted as changes associated with the intervention rather than definitive proof of causality. Other factors, including natural recovery over time, family support, and routine

medical care, may also have contributed to the observed changes. Future controlled studies are therefore needed to determine the independent effect of the multidisciplinary nursing intervention.

Conclusion

Based on the findings of the present study, the multidisciplinary nursing intervention extending from the operating theatre to the hospital, home, and community was associated with significant improvement in the psychological and functional recovery of women following emergency surgical peripartum hysterectomy. Following implementation of the intervention, a marked reduction in post-traumatic stress symptoms and depressive symptoms was observed, accompanied by significant improvement in psychological well-being, postoperative self-care and recovery, coping, maternal functioning, and perceived social support. Most of these improvements were maintained at follow-up, indicating the potential value of continuity of nursing care beyond hospital discharge. The findings also demonstrated significant relationships between PTSD symptoms and several psychological and functional outcomes, particularly depressive symptoms, psychological well-being, self-care, coping, maternal functioning, and perceived social support.

Recommendations

Based on the findings of the present study, the following recommendations are proposed:

- Women undergoing emergency surgical peripartum hysterectomy should be routinely screened for PTSD symptoms during the postoperative period and at subsequent follow-up visits.
- Psychological assessment and supportive interventions should be incorporated into the routine postoperative nursing care pathway for women following ESPH.
- Nursing care should extend beyond hospital discharge through structured telephone, home, or community follow-up to reinforce recovery and identify emerging psychological or physical problems.
- Women should receive individualized education regarding wound care, medication adherence, pain management, nutrition, mobility, warning signs, follow-up appointments, and other postoperative self-care requirements.
- Nurses should provide structured counseling and education aimed at strengthening adaptive coping, emotional regulation, problem-solving, positive reframing, and acceptance of the consequences of hysterectomy.
- Family members and significant others should be involved, with the woman's consent, in education and supportive care to strengthen available social support and facilitate maternal and household reintegration.
- Nursing interventions should address women's concerns related to maternal identity, infant care, family relationships, reproductive loss, and adjustment following hysterectomy.
- Women with persistent or severe PTSD, depressive symptoms, or other psychological difficulties should be referred promptly to appropriate mental-health professionals for comprehensive assessment and management.
- Nurses working in obstetric, gynecological, surgical, and postpartum units should receive training in trauma-informed care, PTSD screening, psychological first aid, postoperative self-care education, and appropriate referral pathways.
- Hospitals should consider developing standardized multidisciplinary care protocols specifically for women following emergency peripartum hysterectomy, integrating surgical recovery, psychological assessment, self-care education, coping support, and post-discharge follow-up.
- Future studies should use randomized controlled designs with larger and more diverse samples and longer follow-up periods to determine the sustained effectiveness of multidisciplinary nursing interventions following ESPH.
- Future research should compare multidisciplinary nursing interventions with routine postoperative care and examine which intervention components contribute most to improvements in PTSD, psychological well-being, self-care, coping, maternal functioning, and social support.

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