Research Article

Empowering Midwifery Students: Educational Intervention Based on Group Counseling for Clinical Stress Management

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Abstract

Background: Clinical education in medical sciences is highly stressful. Students face stressors not only related to the learning environment but also in the clinical setting.

Objectives: This study aimed to investigate the impact of group counseling on clinical stress management among midwifery students at a medical university in southeastern Iran.

Methods: In this quasi-experimental interventional study, a before-after design was employed using the census method involving 48 midwifery students. A researcher-designed questionnaire was utilized to evaluate factors contributing to stress. The educational interventions were conducted in eight group sessions from November 2021 to February 2022 at Pastor Educational and Medical Hospital in Bam City, Kerman province. Data analysis was conducted using the MIC-MAC model, and statistical analyses included the paired sample t-test and Pearson correlation coefficient through SPSS.

Results: Overall, mean scores of stressors decreased significantly after the educational intervention (P = 0.006). Before the intervention, the highest and lowest mean scores were related to "teacher role" (3.15 ± 0.84) and "student's personality" (2.18 ± 0.61), respectively. After the intervention, these subareas continued to have the highest and lowest mean scores of stressors, (2.73 ± 0.94) and (2.19 ± 0.66), respectively. All stressors showed a significant correlation with the total stress score after the intervention.

Conclusions: The presence of stress management programs tailored to the specific needs of medical science students, both in academic and clinical settings, is crucial. These programs should prioritize enhancing communication skills between teachers and students, improving interpersonal relationships, and providing incentives to boost student self-confidence.

Keywords: Group Counseling, Stress Management, Clinical Education, Midwifery, Southeastern Iran

1. Background

Clinical education is a critical component in training students in the medical sciences, allowing them to integrate theoretical knowledge with essential cognitive, psychological, and motor skills. This integration is vital for developing the professional and practical competence needed to deliver effective patient care. However, challenges such as stress can compromise the effectiveness of clinical education. Elevated stress levels in students can lead to depression, insomnia, irritability, hindered learning, and a decline in professional skills (1, 2). Research shows that increased tension and anxiety during training adversely affect students' learning experiences and clinical success, ultimately impacting their overall performance (3). Additionally, stress can lead to problems in problem-solving, reduced coping mechanisms for stressful situations, and decreased flexibility in task performance, all of which negatively affect patient care (4).

Clinical training environments and hospital settings are among the most stress-inducing workplaces. Stress from these settings can hinder students' effective performance of duties, negatively affecting their educational outcomes. This often results in students

being absent from departmental activities and engaging in behaviors that impede their personal growth. When clinical environments fail to provide meaningful practical experiences and learning opportunities, it not only wastes time, energy, and educational resources but also detrimentally impacts service quality and patient care (1, 5). Furthermore, midwifery and maternal care are inherently stressful. Clinical experiences and the presence in the delivery room are major sources of stress for midwifery students (6).

Midwifery is an emotionally demanding profession, and academic midwifery education, particularly in clinical learning, presents unique challenges. As a branch of medicine with diverse roles contributing to community health preservation and promotion, midwifery requires specialized skills and clinical techniques. Midwifery students often face stress-inducing experiences, particularly in their interactions with teachers and within the clinical environment, which impact both their theoretical knowledge and practical abilities. Given the sensitivity of this field and the high demand for specific skills, ensuring the achievement of appropriate clinical competency goals in the midwifery undergraduate program is essential (7).

Numerous studies in Iran highlight a significant gap in the theoretical education and clinical performance of midwifery students. The current clinical education system does not effectively transfer the necessary skills for achieving appropriate clinical competence among students (8). Education, being a stressful experience in itself, combined with the stress of the clinical environment due to dealing with human lives, exposes midwifery students to stress that can, directly and indirectly, affect their performance and mental health (2).

A study aimed at investigating the stressful experiences of midwifery students during clinical education in the delivery room revealed that factors such as lack of teacher support for students, discrimination among students, teacher reprimand in the presence of patients and staff, insufficient clinical skills, management of high-risk patients, and inappropriate behavior of midwives are the most stress-inducing factors in midwifery clinical education (6). While complete elimination of stress may not be possible, individuals can learn effective stress management strategies. The relevant literature has identified interventions to enhance adaptive coping strategies for stress reduction (9).

Evidence indicates that stress can decrease with appropriate changes in behavior. Individuals who receive training in coping with stress and possess more information about stress management are more capable and effective in overcoming stress. Theoretical aspects of stress management, such as relaxation techniques and diaphragmatic breathing, have been proven to reduce stress and anxiety, as confirmed by empirical research (10). Stress management is crucial for lowering anxiety levels and hopelessness while increasing the necessary level of courage. It is described as the ability to manage one's own emotions and those of others. Understanding stress and employing appropriate coping mechanisms are essential, significantly enhancing individuals' adaptability, psychological well-being, and social abilities when facing life's challenges, ultimately reducing anxiety (11).

2. Objectives

Several studies have explored and established the positive impact of group training on stress management (9, 12, 13). Despite the significance and sensitivity of clinical stress management for midwifery students and the paramount goal of enhancing the quality and care of pregnant mothers, including the promotion of safe, natural childbirth, no study has yet investigated the influence of stress management training on midwifery students in the southeast region of the country. Consequently, the current study aims to examine the effect of group counseling on clinical stress management in midwifery students at Bam University in southeast Kerman. The findings from this study are intended to inform the planning and implementation of targeted interventions aimed at improving the stress levels of midwifery students.

3. Methods

3.1. Study Design

This quasi-experimental intervention was conducted using a before-after approach at the Nursing and Midwifery School within one of the medical sciences universities in southeastern Iran, spanning from November 2021 to February 2022, in one of the hospitals in Bam city in Kerman province. The inclusion criteria for the study encompassed undergraduate midwifery students undergoing clinical internships in the labor ward. Excluded from the study were students with acute psychiatric disorders, including depression, anxiety, substance abuse, and psychosis. Additionally, participants excluded from the study comprised those with inconsistent attendance, absence from more than two intervention sessions, new-onset mental disorders,

stressful physical illnesses, and sudden events such as the death of loved ones that could induce sudden anxiety in students.

3.2. Sampling Method and Sample Size

A census sampling approach was employed, encompassing all midwifery students undergoing internships and clinical training [14]. Following the application of inclusion and exclusion criteria, a total of 48 participants were selected.

3.3. Data Collection Tool

In this study, a researcher-designed questionnaire was employed to assess stress-inducing factors in clinical education. The questionnaire's components were derived from similar studies, and the main factors were evaluated using MIC-MAC analysis. Face validity was confirmed by three experts in health education, psychology, and midwifery. Content validity ratio (CVR) and Content Validity Index (CVI) were accepted based on the opinions of six midwifery experts, with means of 0.80 and 0.74, respectively.

The questionnaire's reliability was established through Cronbach's alpha coefficient and test-retest methods in a sample of 32 midwifery students from another university. The mean intra-class correlation coefficient was 0.78, and the mean Cronbach's alpha coefficient was 0.83 for all items. The final questionnaire comprised four domains related to stress-inducing factors: (1), Teacher role; (2), student's skills; (3), student's personality; and (4), clinical environment. Each domain was scored on a five-point Likert Scale, ranging from "very low" to "very high" stress levels.

3.3.1. MIC-MAC Analysis

Stress-inducing factors in clinical education were analyzed using the MIC-MAC software, employing expert ratings and prioritization. This analysis not only assessed the impact of these factors on educational interventions but also evaluated the strength and intensity of their relationships with each other. A matrix table of factors was created, and six midwifery experts assigned scores from zero to three, indicating the mutual relationships' priority and importance. Zero indicated no impact, while three signified the strongest influence. Finally, the results were modeled, and the network of relationships between factors was depicted in one or more diagrams.

The present study was designed as a quasi-experimental intervention using a before-after approach in a single sample. After obtaining the necessary permissions and informed consent, questionnaires were administered to collect pre-intervention data. Initially, a descriptive panel was established, and face-to-face interviews were conducted by the participants themselves under the direct supervision of the research team.

Following the completion of the pre-test within a week, educational interventions were implemented. These interventions were led by a specialized health psychologist and a midwifery counselor in eight in-person sessions for participants, organized into different cohorts, lasting a total of 16 hours (2 hours per session with two sessions per week). After the final session, the post-test was distributed and completed [15]. The content of the educational intervention package was developed based on findings from similar studies [16] (Table 1).

3.4. Data Analysis

Qualitative data analysis was conducted using the MIC-MAC software to summarize the experts' opinions based on the component matrix table. The aggregated pre-test and post-test data collected from the questionnaires were inputted into the SPSS software with specific codes and analyzed with a 95% confidence level. The analysis involved examining the mean and standard deviation of scores, variable frequencies and percentages, paired sample *t*-tests, and Pearson correlation coefficients. A significance level of less than 0.05 was considered for all tests.

4. Results

The mean age of participants was 22.8 ± 3.8 years, with approximately 60% of participants below the age of 22 years old. About 40% of the participants were in their final year of study. Approximately 53% of the participants resided in dormitories, and more than 93% had no history of academic failure (Table 2).

The overall score of stressors decreased significantly after the educational intervention (P = 0.006). Before the intervention, the highest and lowest mean scores of stressors were related to the role of the teacher (3.15 ± 0.84) and the student's personality (2.18 ± 0.61), respectively. After interventions, the highest and lowest mean scores of stressors remained the same, related to these two domains (2.73 ± 0.94) and (2.19 ± 0.66), respectively. There was a significant difference in the mean scores before and after the intervention in the teacher role (P = 0.003) and the clinical environment (P

Table 1. Contents of Educational Intervention's Sessions

Session	Content
1st	Introducing and stating the goals of the meetings and defining stress and how it affects physical, mental and social functioning.
2st	Investigating the sources of stress and stressors in the hospital environment, describing the appropriate reactions to daily pressures and stresses, training, and practicing deep abdominal breathing.
3st	Teaching behavioral techniques of stress management, including problem-solving, time management, diaphragmatic breathing, and positive thinking.
4st	Checking the list of daily enjoyable activities, identifying other enjoyable activities; and considering and adding these activities to the list of enjoyable activities.
5st	Paying attention to changing the physical and mental state (thoughts and perceptions) and achieving relaxation through relaxation techniques and anxiety control methods and conscious and moment-to-moment attention, walking practice and focusing on the body's state and changes while walking.
6st	Letting go of negative and stressful thoughts and beliefs, examining issues in a multidimensional way with a clear and open mind, challenging irrational and ignorant thoughts and desires, and examining the role of communication and friendships in reducing stress and depression as supportive sources.
7st	Description of anxiety and its symptoms, investigation of issues and factors effective in causing anxiety and stress, training of conscious responses to stressful issues including balancing physical reactions to stress (deep breathing-muscle contraction training), description and investigation of the role of exercise in reducing stress, self-care and increasing pleasurable and pleasant feelings, making a list of negative thoughts and self-talk and replacing them with positive thoughts and sentences.
8st	Receiving feedback from the group members about the principles taught, reviewing and summarizing past materials, recommending daily planning for activities, using mindfulness techniques (mindful walking, mindful music, mindful eating, etc.) in life and its generalization to the whole flow of life, emphasis on the use of deep and abdominal breathing when facing anxiety and stress.

Table 2. Characteristics of the Subjects

Variables	Values [a]
Age, y	
18 - 22	29 (60.4)
22 - 25	14 (29.2)
> 25	5 (10.4)
Year of university entrance	
2016	19 (39.6)
2017	15 (31.3)
2018	14 (29.2)
Academic semester	
4	14 (29.2)
6	15 (31.3)
8	19 (39.6)
Settlement	
Dormitory	25 (52.1)
Private house	23 (47.9)
Failure record	
No	45 (93.8)
Yes	3 (6.3)

[a] Values are expressed as No. (%).

< 0.001), but no significant changes were observed in others (Figure 1 and Table 3).

The MIC-MAC analysis of the stressor factors in clinical education revealed that the student's skill, personality, teacher role, and academic years were the strongest related factors to the increase or decrease of educational stress. The weakest correlation among the examined factors was associated with the student's history of academic failure (Figure 2).

The MIC-MAC analysis of influential stressor factors in clinical education highlights that the student's place of residence, age, and the clinical education environment are categorized as independent components. They warrant priority attention as they possess the potential to indirectly and covertly influence other factors. On the other hand, the student's personality, skill set, and academic years are identified as dependent components. Changes in other factors will
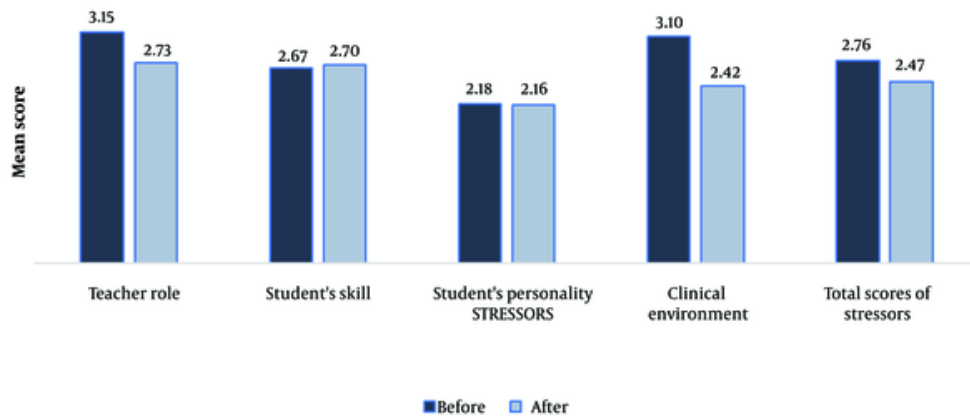
Figure 1. Mean scores of stressors before and after the educational intervention

affect these components, suggesting that they do not require high priority (Figure 3).

All subareas of stressors showed a significant correlation with the total stress score (Table 4). However, no significant correlation was observed between any demographic variables and stressor scores.

5. Discussion

Midwifery, as a vital branch of medical sciences, encompasses diverse roles crucial for maintaining and enhancing societal health. Given the critical nature of this field, with a high demand for specialized skills and prompt execution of numerous procedures, ensuring the attainment of clinical education goals becomes paramount. Providing students with excellent and comprehensive training, free from stress, plays a significant role in elevating the quality of services in midwifery. This research, structured as a semi-experimental design, aimed to gauge the effectiveness of group counseling on clinical stress management in midwifery students.

The findings revealed that stress management training programs resulted in a notable reduction in stress and anxiety levels among students, leading to a significant enhancement in their mental health. This underscores the effectiveness of educational programs focused on stress reduction and anxiety management, a conclusion supported by empirical research (17). These results align with the positive outcomes reported in similar intervention programs from previous studies. Van Der Riet et al.'s pilot study on stress management and mindfulness training for nursing students

demonstrated increased focus, mental clarity, and decreased negative perceptions (18). Similarly, Fathi Ashtiani et al. showed the positive impact of stress management and communication skills training programs in reducing stress among nurses (19).

The study's findings indicate that, according to students, the primary sources of stress in clinical education are linked to the instructor and the clinical environment, while the least stressful factor is the student's personality. In contrast, Akhavan Akbari et al. identified unpleasant emotions, clinical experiences, humiliating experiences, interpersonal relationships, educational planning, and the learning environment as the most stressful factors in their study (20). Consistent with our results, Darban's study also discovered that the most significant stressors for participants were associated with the instructor and the clinical environment (2).

In the instructor domain of the present study, the highest stressors included subjective evaluation by the instructor, the instructor's questions and answers in the presence of others, and the instructor's reprimands to students in the presence of patients and staff. These factors showed a reduction in stress scores after the intervention. In Moridi's study, the instructor's reprimands in the presence of ward staff, physicians, and other students were identified as the most significant stress-inducing factor in this domain (21). Saki et al.'s research supports the idea that student punishment in the presence of others and ineffective communication between the instructor and the student during internships are significant stress-contributing

Table 3. Scores of the Sub-areas of Stressors Related to Clinical Training Among Participants

Area and Sub-area	Mean ± SD		P-Value
	Before	After	
Teacher role			
Reminder of the instructor in the presence of the patient and staff	3.50 ± 1.23	3.14 ± 1.11	0.061
Fear of student evaluation in the presence of others	3.18 ± 1.12	2.89 ± 0.99	0.155
Questions and answers of the instructor in the presence of others	3.41 ± 0.96	2.85 ± 1.25	0.010
The stress of the couch	2.45 ± 1.14	2.20 ± 1.03	0.116
Failure of the instructor to support the student during problems	2.95 ± 1.16	2.70 ± 1.25	0.234
Ineffective communication between the instructor and the students	3.10 ± 1.24	2.68 ± 1.27	0.070
Evaluating the teacher's taste	3.47 ± 1.18	2.70 ± 1.33	< 0.001
Reprimanding the student by the instructor in the presence of others	3.12 ± 1.16	2.85 ± 1.27	0.129
Deprivation of the student's independence by the instructor	3.00 ± 1.20	2.58 ± 1.26	0.022
Lack of knowledge of evaluation method	3.33 ± 1.35	2.72 ± 1.30	0.008
Total score	3.156 ± 0.84	2.737 ± 0.94	0.003
Student's skill			
Insufficient clinical knowledge	2.60 ± 1.04	2.50 ± 1.16	0.617
Inability to use the equipment in the department	2.62 ± 1.04	2.75 ± 1.08	0.485
Fear of making mistakes in providing care	3.02 ± 1.13	2.89 ± 1.15	0.550
Giving oral drugs	2.33 ± 1.20	2.27 ± 0.93	0.799
Giving non-oral drugs	2.81 ± 1.31	2.50 ± 1.09	0.149
Lack of necessary preparation when attending the patient's bedside	2.58 ± 0.94	2.54 ± 1.09	0.819
Fear of hurting the patient	2.66 ± 1.09	2.77 ± 1.09	0.574
Fear of unknown things	2.72 ± 1.10	2.75 ± 1.13	0.906
Total score	2.671 ± 0.65	2.701 ± 0.82	0.837
Student's personality			
Inability to communicate with the patient	1.89 ± 0.77	2.08 ± 0.91	0.269
Inability to communicate with doctors	2.60 ± 1.16	2.25 ± 0.95	0.078
Inability to communicate with midwives	2.37 ± 1.04	2.25 ± 0.95	0.497
Inability to communicate with service personnel	1.97 ± 0.86	2.02 ± 0.78	0.772
Inability to communicate with students from other fields	1.91 ± 0.76	1.91 ± 0.70	0.976
Inability to communicate with classmates in the internship group	2.00 ± 1.09	2.06 ± 0.88	0.714
Lack of self-confidence	2.39 ± 1.18	2.25 ± 1.04	0.442
Not interested in the field of midwifery	2.06 ± 0.90	2.02 ± 0.93	0.728
Inability to take responsibility	2.14 ± 1.09	2.00 ± 1.03	0.448
My physical condition	2.33 ± 1.07	2.37 ± 1.16	0.839
My mental state	2.37 ± 1.04	2.62 ± 1.23	0.252
Total score	2.189 ± 0.61	2.168 ± 0.65	0.852
Clinical environment			
Dealing with the supervisor	2.68 ± 1.16	2.54 ± 1.09	0.492
Dealing with the doctors of the department	2.91 ± 1.10	2.39 ± 1.10	0.015
Dealing with the Personnel	3.04 ± 1.09	2.29 ± 1.23	< 0.001
Lack of facilities and equipment in the department	2.72 ± 1.10	2.33 ± 1.11	0.038
A large number of students in the department	2.97 ± 1.19	2.25 ± 1.10	< 0.001
Discrimination between students of midwifery and other fields	3.85 ± 1.22	2.58 ± 1.33	< 0.001
Crowded the ward	3.20 ± 1.09	2.37 ± 1.10	< 0.001
Absence of conference room	3.31 ± 1.35	2.47 ± 1.25	0.001
The disrespect of the department staff to the student	3.25 ± 1.13	2.54 ± 1.32	0.001
Total score	3.108 ± 0.86	2.421 ± 0.87	< 0.001
Total stress score	2.763 ± 0.46	2.473 ± 0.62	0.006

factors, aligning with our study findings (22). Ineffectual communication between the instructor and student may result from the engagement of inexperienced and unskilled instructors or the instructors' use of tactics to assert control over the clinical setting. However, there are situations where delaying feedback on care errors may not be feasible. In such cases, it becomes essential to transition from a directive approach and instructor-centered supervision of student performance to a collaborative approach involving the instructor, student, and staff in implementing care techniques. When students observe active engagement by the instructor or staff in performing care actions and receive instructional feedback during these interventions, they are less likely to be influenced by the pressure resulting from excessive practical work.

For midwifery students, heightened stress can be attributed to the substantial expectations placed on them by staff and instructors. The requirement to execute numerous clinical tasks to maintain their position in the clinical environment, coupled with conflicting instructions from staff and instructors, can lead to anxiety and concern about potential verbal reprimands. Interestingly, this stress might even surpass that experienced in childbirth situations where students are solely involved in a single delivery (5).

In the clinical environment, the most prominent stress-inducing factor was linked to discrimination between midwifery students and those in other fields. Moridi et al.'s study reported that discrimination by the treatment team against students from other disciplines is a significant source of stress (21), a finding
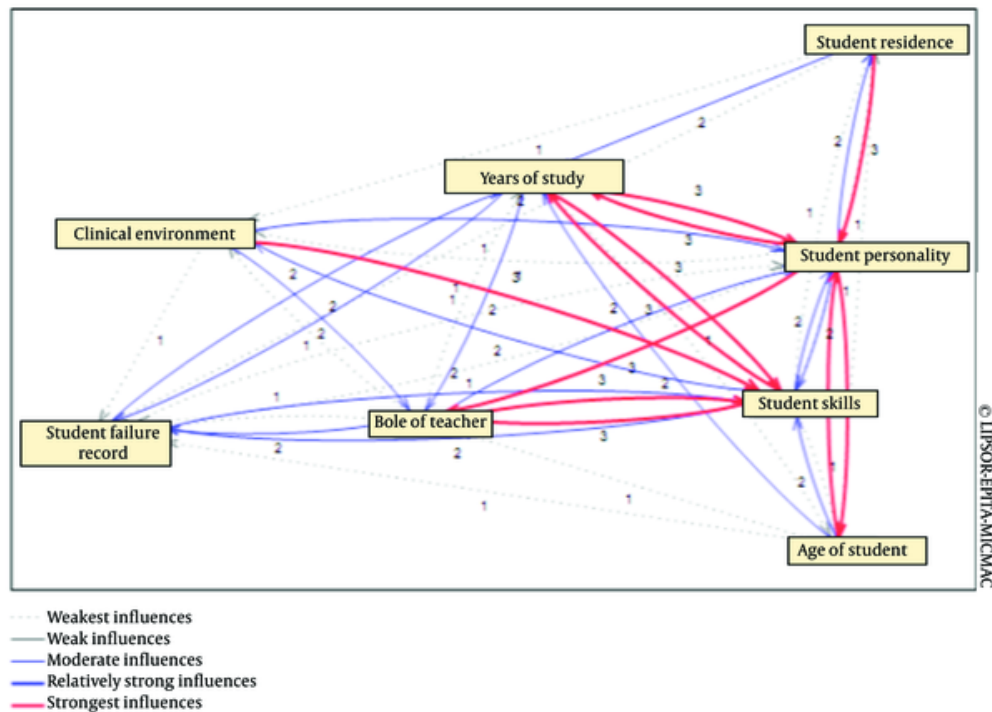
Figure 2. The relationship between subarea stressors is based on the MIC-MAC model after the intervention among participants.

corroborated by Pourheidari's study ([6]). However, in Akhavan Akbari's study, disrespect of staff towards students and unfamiliarity with the labor and delivery environment were associated with minimal stress, while students considered the lack of comfort facilities in the bedside environment as the most stressful factor in the educational setting ([20]).

It's worth noting that in the clinical study mentioned, no accommodation or room might have been provided for students in the hospital setting. Consequently, students spend their working hours, especially during night shifts, alongside patients. This circumstance has resulted in fatigue and increased stress for the students. In this study, the highest stress factor in the personal domain of students was linked to the inability to communicate with physicians and a lack of self-confidence. Notably, these factors exhibited a decrease in scores after the intervention. Lack of sufficient experience and self-confidence has been consistently reported as a source of stress in various types of research in the field of clinical experience ([5]).

Factors associated with student skills, particularly the fear of making mistakes in providing care, were identified as the most stressful in this study. In Haris Abadi's research, fear of making a mistake that harms the patient was reported as a stress-inducing factor related to student skills ([23]). Similarly, in Akhavan Akbari's study, fear of the death of the fetus or baby was highlighted as the most stressful factor in this area, with scores decreasing after the intervention ([20]).

Typically, students harbor concerns about making mistakes due to insufficient knowledge and skills, contributing to stress in the clinical environment. The fear of making a mistake in providing care is consistently identified as a stressful factor in studies by Sardari Kashkooli et al. and Hemmati Masalakpak et al., where the fear of performing incorrect procedures emerged as the most tension-provoking factor ([24], [25]). Given the sensitivity of the midwifery field and the critical implications for the lives of mothers and infants, the stress experienced by midwifery students due to the risk of mistakes and insufficient skills in their care is justifiable. This stress is not only a personal challenge for students but also a national health indicator, underscoring the gravity of ensuring competent care in this field. The primary goal of clinical training in
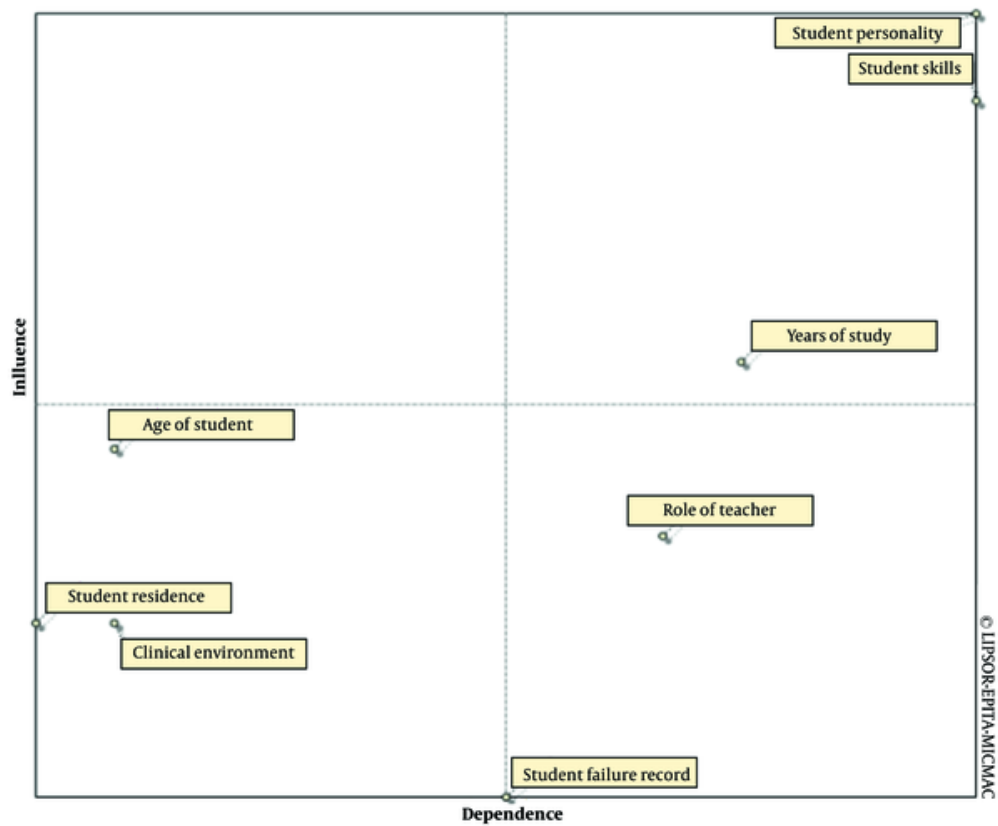
Figure 3. The influence and the dependence of subareas stressors after the intervention among participants

Table 4. Correlation Between Stressors and the Total Stress Score After the Intervention Among Participants

Variables		Teacher Role	Students Skill	Students' Personality	Clinical Environment	Total Stress Score
Teacher role	Pearson	1				
	Sig. (2-tailed)	-				
Students' skill	Pearson	0.404 [a]	1			
	Sig. (2-tailed)	0.004	-			
Students' personality	Pearson	0.410 [a]	0.555 [a]	1		
	Sig. (2-tailed)	0.004	< 0.001	-		
Clinical environment	Pearson	0.441 [a]	0.308 [b]	0.649 [a]	1	
	Sig. (2-tailed)	0.002	0.033	< 0.001	-	
Total stress score	Pearson	0.777 [a]	0.698 [a]	0.828 [a]	0.773 [a]	1
	Sig. (2-tailed)	< 0.001	< 0.001	< 0.001	< 0.001	-

[a] Correlation is significant at the 0.01 level (2-tailed).

[b] Correlation is significant at the 0.05 level (2-tailed).

hospitals is to provide students with academic and clinical experiences, fostering an environment conducive to learning and progressing as care providers (23).

In the present study, factors such as the role of the teacher, student personality and skills, and previous academic performance exhibited the least correlation with the level of student stress compared to other stress-inducing factors. Students often enter relevant departments after completing theoretical courses, lacking previous experience in performing routine tasks specific to those departments. Occasional mistakes due to inexperience may cause stress. However, with support from experienced teachers, staff, and nurses, and with a receptive personality, the impact of this stress can be mitigated, making the execution of assigned responsibilities more manageable. The presence of experienced professors can contribute to a more relaxed environment, enabling students to perform their tasks with greater ease and reduced stress ([26]). Factors like place of residence, student age, and the clinical education environment are identified as indirect influencers of other stress-related factors, particularly personality, skills, and the number of study years. Consequently, it is crucial to pay special attention to these factors in order to exert control over stress as much as possible ([27]).

5.1. Conclusions

Based on the study's results regarding the effectiveness of group education on clinical stress management in students, it is recommended that stress-inducing educational factors be addressed, student learning is facilitated, and clinical educational goals are achieved. To prevent the psychological and physical effects of stress on students, the utilization of experienced and committed clinical instructors is suggested, given their significant role in clinical education, particularly in the delivery room. Awareness of stress-inducing sources, coupled with stress management training and enhanced scientific and professional knowledge, can increase students' adaptability and create a conducive learning environment.

Reducing stress-inducing factors in midwifery students can be achieved through the provision of a suitable clinical environment, precise educational planning, and ensuring staff familiarity with students' educational goals. Considering these findings, the implementation of stress management programs tailored to students' problems and conflicts is deemed necessary. Such programs should focus on enhancing communication skills between teachers and students (interns), improving interpersonal relationships, and emphasizing motivating factors to boost students' self-confidence. This approach aims to enable students to confidently and effectively fulfill their job responsibilities after graduation.

Due to the prevalence of the COVID-19 epidemic, educational sessions were conducted in small groups, and the implementation of intervention sessions was limited by adhering to health protocols.

Acknowledgements

Footnotes

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