

Impact of Psycho-Educational Program on Nurses' Performance regarding Care of Patients with Delirium in Intensive Care Unit

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Abstract:

Background: Delirium is a common, potentially fatal, and avoidable cause of morbidity and death in patients in the intensive care unit. Delirium that is left untreated raises the risk of death, morbidity, and functional decline. This results in a greater need for nursing care, higher medical expenses, and longer hospital admissions. Numerous studies show that nurses' approaches and expertise regarding delirium are inadequate. So, **the study aimed** to evaluate the Impact of psycho-educational programs on nurses' performance regarding the care of patients with delirium in the intensive care unit. **Design:** A quasi-experimental research design was used to achieve the aim of this study. **Setting:** This study was conducted in the intensive care unit at Sohag University Hospital. **Sample:** - A convenient sample of 50 nurses working in the previously selected setting. **Tools:** Three tools were used: Tool I: Nurse's knowledge assessment sheet regarding delirium, Tool II: Nurse's reported practice caring for patients with delirium, and Tool III: Nurse's satisfaction with the psycho-educational program. **Results:** The mean scores of intensive care unit nurses about their knowledge and practices regarding the care of patients with delirium have significantly improved since the implementation of the psycho-educational program. When compared to pre-psycho-educational programs, the study's results showed that most of the nurses under investigation had satisfactory knowledge and competent practices. The total knowledge and practices of nurses before and after the psycho-educational program showed a good association. **Conclusion:** The study found that a psycho-educational program on delirium improved nurses' performance in providing delirium patients with care in an intensive care unit. **Recommendations:** Nurses should be offered a carefully thought-out psycho-educational program to enhance their delirium performance.

Keywords: Patients with delirium, Nurses' performance, Psycho-educational program.

Introduction:

The inability to sustain or shift focus due to an interruption of awareness is known as delirium. This abrupt shift in awareness can happen at any time of day, and it's not always related to dementia. According to numerous studies, delirium occurs in 20–50% of patients who are not receiving mechanical ventilation and in 60–80% of intensive care unit patients who are (World Health Organization, 2022 & Smonig et al., 2019).

Patients in an intensive care unit are critically sick individuals with diseases of the heart, brain, lungs, or other organs. Heart and neurological monitoring as well as round-the-clock care are often needed for these patients. Pain, invasive procedures, strange environments, and fear of death are frequent causes of brain dysfunction in intensive care unit patients (Ibrahim et al., 2019).

In patients in the intensive care unit, delirium is commonly a sign of severe brain damage. One of the top six reasons for hospitalization-related injuries is delirium in those over 65, according to the American Association of Retired Persons. According to Travers et al. (2019),

delirium is common in intensive care unit (ICU) patients as a result of acute multisystem illness, related disorders, medications, and other environmental factors.

In addition to catheterization and tube feeding, other techniques include physical restrictions and blocking out visible light during the day. Risk factors for delirium in the intensive care unit include alcoholism, hypertension, dementia that predates the patient's admission, and a high degree of sickness. Patients in the intensive care unit may experience delirium if they are given sedative medications. Delirium has been linked to both benzodiazepines and dexmedetomidine (Davis et al., 2019).

It has been noted by several writers that nurses are not well-versed in delirium screening procedures and lack the information and abilities needed to recognize the condition. The literature clearly shows that nursing staff members who work in intensive care units around the world exhibit inconsistent and inadequate engagement in delirium recognition. According to Devlin et al. (2019) and Tsang et al. (2019), some of the obstacles mentioned in the literature are: not having enough time; not knowing

enough about delirium; having trouble evaluating patients who are sedated and intubated; feeling that screening instruments are too complicated; not receiving performance feedback; and not having the support of doctors.

Elfeky & Ali (2019) discovered that, despite their years of experience caring for critically sick patients, all Egyptian intensive care unit nurses (100%) ranked delirium evaluation as their fourth most important task, after monitoring patients' level of consciousness, assessing pain, managing agitation, and providing gadget care. A total of 100% of the nurses in the study were not trained in the assessment and management of delirium, and 54% of the nurses were never evaluated for delirium. According to **Abusaad et al. (2019)**, however, most nurses lack a basic understanding of delirium, including its description, causes, and management. In addition, over 50% of them have a bad attitude toward delirium, and most of them engage in subpar behavior.

The lack of instruments and challenges in screening for delirium in patients on ventilators in intensive care units were the most frequent obstacles to delirium screening. The use of resource nurses for training, team objective structured clinical encounters (TOSCE), interactive sessions, didactic lectures, case scenarios, scripted unfolding case studies, and in-service education are effective strategies in recognizing delirium (**Lee et al., 2020**).

Evidence-based therapy for anxiety disorders must include psycho-education, according to **Cassie et al. (2020)**. Psycho-education is one of the many components of cognitive behavioral therapy (CBT). According to **Hedman and Axelsson (2019)**, the purpose of psycho-education is to empower the client and help them acquire appropriate coping mechanisms. Educating the public about health issues, providing training to caregivers and service users, and assisting other members of multidisciplinary teams in developing their roles as mentors and educators are all crucial tasks performed by nurses (**WHO, 2020**).

Intensive care unit nurses have an advantage in evaluating patients' cognitive abilities because of the length of time they spend at the patient's bedside. Inadequate patient evaluation skills prohibit nurses from acting before it's too late to stop patients from developing mental health issues in the future. According to numerous studies, undiagnosed delirium in older adults causes problems during hospitalization, an extended stay, and even mortality. Nurses' capacity to identify delirium in their patients is hindered by numerous factors, and the word "delirium" itself might cause medical practitioners anxiety. Lack of understanding is sustained because medical professionals frequently label mental and behavioral changes as "confusion" (**Ghaeli et al., 2020**).

Significance of the study:

Delirium affects 15–25% of patients in normal medical wards, 60–80% of patients in surgical wards, and up to 80% of the sickest ventilated patients in critical care, the most prevalent neuropsychiatric illness in hospitals. To find out how often delirium is among patients in the intensive care units at Mansoura University's Emergency Hospital, we conducted empirical observation and reviewed medical records. We discovered that no data had been preserved. Consequently, medical professionals were finding it challenging to identify and treat delirium in patients in intensive care units. One of these issues is the dearth of assessment instruments, which causes delirium to be misunderstood, mistreated, or even ignored. This illness increases the risk of significant morbidity and death (**Heeder et al., 2019**).

In order to assess delirium in patients in intensive care units, research on nurses' attitudes and methods in this area are required. Nurses need to be aware of these hazards and able to practice according to current research recommendations. The study therefore sought to assess the effect of a psycho-educational program on nurses' performance in delirium patient care in a critical care unit.

Operational definitions:

Nurses' performance: Included nurses' knowledge and practice.

Aim of the study:

To evaluate the impact of psycho-educational programs on nurses' performance regarding the care of patients with delirium in the intensive care unit through:

- Assess the knowledge level among delirium nurses care of patients with delirium pre and post-psycho-educational program.
- Assess the practice level among delirium nurses care of patients with delirium pre and post-psycho-educational program.
- Determine the association between nurses' knowledge and practices care of patients with delirium pre and post-psycho-educational program.

Research hypothesis:

H1: Nurses caring for patients with delirium at the intensive care unit are expected to have higher knowledge mean scores post-psycho-educational program than pre-psycho-educational program

H2: Nurses' care for patients with delirium at the intensive care unit is expected to have higher practice mean scores post-psycho-educational program than pre-psycho-educational program

Subjects and Methods

Research design:

To accomplish the goal of this study, a quasi-experimental research method was used, utilizing a pre- and post-test to gauge participants' proficiency in applying newly introduced concepts or knowledge gained during training sessions.

Research Setting:

This study was conducted in the intensive care unit at Sohag University Hospital

Subjects:

A convenience sample of 50 nurses working at the previously selected setting.

Tools of data collection:

Tool I: The Nurse's knowledge assessment sheet regarding delirium, was divided into two parts:

Part 1: Nurses' data: It consisted of six items concerning age, sex, qualification, years of experience in ICU, working hours, and residence.

Part (2): "Nurses' knowledge sheet of delirium" To gauge the level of delirium knowledge among intensive care nurses, the researcher updated this tool, which was adapted from (10) after researching the literature (**Smith, A. 2019; Kim, & Hong, 2019**). This tool consisted of seven sections with forty-three multiple-choice and true/false questions. The questionnaire covered topics such as delirium's definition, prevalence, classifications, risk factors, clinical presentation, evaluation, treatment, and nursing care.

The scoring system

Points are awarded for each correct response; incorrect, missed, or unidentified replies are deducted. We divided the total number of responses by the number of items for each area of knowledge to obtain the mean score. We then took these data and calculated a percentage. The 43-point total score is split into two categories: knowledge that is less than 75% unsatisfactory and knowledge that is more than 75% satisfactory (equal to or more than 75%).

Tool II: Nurses' reported Practices caring for patients with delirium: After examining the literature, the researcher created and developed it (**Oh, 2018 & National Institute for Health & Care Excellence., 2019**). It was applied to assess the methods employed by intensive care nurses to treat patients with delirium. There are twelve main parts to this tool for diagnosing and treating delirium. Every nurse was watched by the researcher for sixty minutes. Delirium assessment, proper fluid balance, aeration and oxygenation, nutritional support, circulation, effective communication, pain

management, skincare, sensation, safety, infection prevention, and sleep/wake pattern are just a few of the twelve topics that make up this checklist and its (98) items.

Scoring system:

Correctly completed steps received a score of 1, while incomplete items received a value of 0. The mean score for the portion was calculated by adding up all of the item scores for each area and then dividing the total by the total number of items. The overall result was (98 grades). A percentage score was created from these scores. Two groups will be created based on the total score: incompetent practice level (<75% of the total) and competent practice level (>75%).

Tool III: Nurses' satisfaction with the psycho-educational program.

It included three statements regarding whether the contents of the **psycho-educational program** were clear, satisfaction with the **psycho-educational program**, did the **psycho-educational program** improve nurses' knowledge and practices.

The procedure of data collection:

Preparatory phase:

The researchers looked into historical and current literature, including textbooks, journals, periodicals, and internet searches, to develop the instruments for gathering data and creating the psycho-educational program. In an official letter to the directors of Sohag University Hospital before the start of the study, the dean of the nursing faculty asked for their cooperation and permission to collect data from the selected setting.

Validity of the tools:

A board of five experts in the fields—two professors in critical care nursing and three professors in psychiatry health nursing—assessed the face and content validity of the tools for clarity, comprehensiveness, appropriateness, and relevance. The board also determined the tools' suitability for use in these settings. There were no changes made.

Reliability of the tools:

Cronbach's alpha reliability test was used to measure dependability. Results showed that the first tool had reasonably homogeneous items, as indicated by high reliability; the second tool's reliability was shown by $\alpha = 89\%$; and the third tool's reliability was shown by $\alpha = 90$.

A pilot study

After the tool was developed, a pilot study including 10% of the nurses was conducted (5 nurses). This was done to check for any ambiguities in the tools, confirm item transparency, and determine how long it would take to collect the data. The final version of the tools, which included testing and clarifying the feasibility of the research process, was developed using the pilot study's

findings. The main study includes nurses who participated in the pilot study.

Ethical considerations:

The research ethics committee of the Sohag University Faculty of Nursing gave approval for this study to be conducted. The researcher explained to the nurses before beginning the questionnaire that they might withdraw from the study at any time without giving a reason and that participation in it was entirely voluntary. They were additionally guaranteed that the data they submitted would be kept private and utilized exclusively for research.

- The study's implementation was done in three stages: assessment, implementation, and evaluation.

I-Assessment phase:

Once permission was granted to proceed with the study, the researchers visited the study settings. The researchers began recruiting a sample of nurses. The researchers introduced themselves to each nurse individually, gave them an overview of the study's objectives and procedures, and invited them to take part. The researchers read and explained each item of study tools to each nurse and recorded her responses to each item. The researchers began filling in the questionnaire which took about 35 to 45 minutes to be completed. Using the research questionnaire, they interviewed each nurse individually to obtain baseline data of demographic characteristics, knowledge, and practice questionnaires.

Tools were used twice. They were used as a pre-test for the first time to gauge nurses' stated practice and understanding of delirium. A month later, the same instruments were used once more to evaluate the impact of psycho-educational training on nurses' understanding and application of delirium management.

The nurses took about 30 to 35 minutes on average to finish the tools. Every nurse who took part in the study received explanations on the purpose of the investigation, the elements of the instruments, and how to fill out the questionnaire. The researchers gave psychoeducation materials to the participating nurse groups after outlining the purpose of the study and giving the nurses instructions on how to use them.

II-Implementation Phase:

July 2023 marked the commencement of the actual fieldwork, which lasted until December 2023. The nurses were first given an introduction by the researchers, who also described the nature and goals of the study. The purpose and anticipated results of the study, the contents of the instruments, and appropriate responses during this phase were all explained to the nurses by the researchers.

For the previously indicated settings, data were gathered on three days each week during the morning, evening, and night shifts. Each nurse was interviewed by the researcher to go over the procedures and objectives of the study. It is easier for the researcher to prevent disruptions in the work system caused by group interviews when they choose to do individual interviews. The psycho-educational program's design and planning were informed by a review of pertinent literature as well as the needs assessment completed by the study's nurses (pre-test). Upon completion of the training, nurses working in intensive care units may get the requisite information and abilities to effectively care for patients experiencing delirium.

The sessions of the psycho-educational program covered twelve hours of material in total. Seven of those hours were dedicated to theoretical information about delirium, including its definition, subtypes, incidence, risk factors, clinical manifestation, assessment, and management. The remaining five hours were devoted to practical information about how to care for patients with delirium, including the instruments used in intensive care units to assess delirium. Three days a week for four weeks was the duration of the psycho-educational program sessions. Five groups of nurses were formed. To prevent a scarcity of nurses in the workplace and due to shift differences, each group comprised ten nurses.

To make sure that all study subjects were understood, sessions were held in Arabic. These sessions comprised the following: (6 theoretical and 2 practical sessions). Each theoretical and practical session lasted thirty to forty minutes. The pamphlet was given to nurses who completed the pre-test. The researchers created PowerPoint presentations, posters, and movies to aid nurses in understanding delirium.

The following is the presentation of the psycho-educational program's content: two practical and four theoretical courses:

The first session was an orientation that focused on building rapport between the researchers and the teenagers being investigated, as well as outlining the instructions' goal.

Second session: Instruction on the types, incidence, and definition of delirium.

In the third session: Education on delirium risk factors, clinical manifestations, and assessment is covered.

Fourth session: instruction in delirium nursing care and management.

The fifth session covered meditation techniques, including definitions and procedures, as well as the value of practicing yoga poses, deep breathing exercises, and

muscular relaxation exercises. In addition, evaluate for delirium, establish and maintain a normal fluid balance, establish and maintain oxygenation and aeration, offer nutritional support, and keep circulation intact.

Fourth session: instruction in delirium nursing care and management.

The fifth session covered meditation techniques, including definitions and procedures, as well as the value of practicing yoga poses, deep breathing exercises, and muscular relaxation exercises. In addition, evaluate for delirium, establish and maintain a normal fluid balance, establish and maintain oxygenation and aeration, offer nutritional support, and keep circulation intact.

III. Evaluation phase:

To determine the effect of the psycho-educational program on nurses' performance in caring for patients with delirium in the critical care unit, the nurses were interviewed and evaluated following the start of the sessions one month later using the same pre-assessment methods.

Statistical analysis:

Statistical analysis and data entry were carried out with SPSS for Windows, version 20. Descriptive statistics were used to present the data; for qualitative variables, this took the form of frequencies and percentages, and for quantitative variables, mean and SDs. The t-test, which compares two means, was employed. At a P-value <0.05, statistical significance was deemed to have occurred.

Results:

According to Table 1, 72% of the nurses under study were female and 60% had aged over 25. Their mean age was 26.7 ± 4.5 years. Regarding the nurses under study, 60% of them have degrees from technical institutes of nursing. In terms of years of experience, 44% of them had less than five years. About working hours, 52% of people put in more than eight hours a day at work. In terms of where they lived, 70% of the nurses in the study were urban residents.

Figure (1): Illustrated that (80%) of the studied nurses stated that the main source of knowledge regarding the care of patients with delirium in the intensive care unit was doctors.

Table (2): shows that the nurses' total knowledge mean scores on delirium before and after the psycho-educational program differed and improved in a highly statistically significant (P-value: 0.001). The pre-psycho-educational program means score of the nurses under study was 18.73 ± 7.30 , and the post-program mean score increased to 41.33 ± 1.22 with highly statistically significant differences.

When comparing the pre-and post-psycho-educational program knowledge of delirium, Figure (2) shows that 80% of the nurses under study had a unsatisfactory knowledge level pre-program, whereas 90% had a satisfactory level post- program.

Table (3) shows a significantly significant improvement in the nurse's overall delirium practices before and after the psycho-educational training (P-value: 0.001). Before the psycho-educational program, the overall mean score of the examined nurses' practices was 52.22 ± 20.33 ; after the program, it increased to 94.33 ± 6.67 , with highly statistically significant changes.

Figure (3) demonstrates that, before the psycho-educational program, 60% of the nurses under study had an incompetent level of practice regarding delirium, whereas 94% of them had a competent level of practice.

Between the pre- and post-psycho-educational program scores for the nurses under study, **Table (4)** shows a substantial association between the total knowledge and total practice scores.

As seen in **Figure 4**, all of the nurses who were studied (100%) said that the psycho-educational program's content was understandable, and 98% of them expressed satisfaction with it. Regarding the program's impact on knowledge and practices, all (100%) of them said that it enhanced their knowledge and practice.

Table (1): The studied nurses distribution regarding their data (n=50)

Personal data	No.	%
Age (Years)		
< 25 years	30	60.0
25 - ≥ 36 years	20	40.0
Mean ± SD	26.7 ± 4.5	
Gender:		
Male	15	30
Female	35	70
Qualifications:		
Technical Institute of Nursing	31	62.0
Baccalaureate degree in nursing	19	38.0
Years of experience:		
< 5 years	22	44.0
5 – <10 years	18	36.0
10 - ≥15 years	10	20.0
Working hours		
• 6 – 8 hours	24	48.0
• > 8 hours	26	52.0
Residence		
Urban	35	70.0
Rural	15	30.0

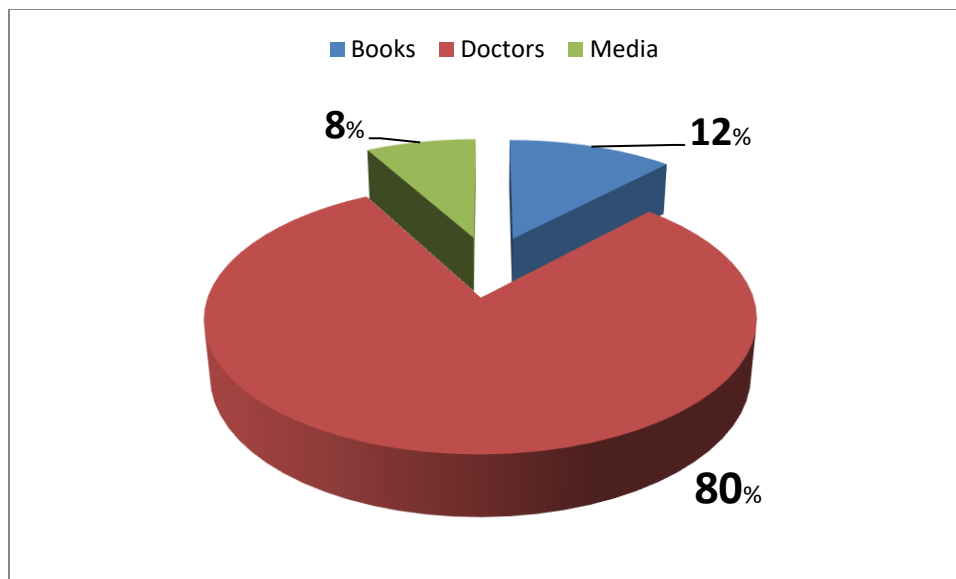


Figure (1): Nurses' source of knowledge regarding care of patients with delirium in the intensive care unit (50)

Table (2): Differences in nurses' Total knowledge Mean Scores about delirium Pre and Post psycho-educational program (n=50)

Knowledge items	Pre psycho-educational program	Post-psycho-educational program	t-test	P-value
Total knowledge scores	18.73±7.30	41.33±1.22	22.44	0.001**

(**) highly statistical significance at $p < 0.001$

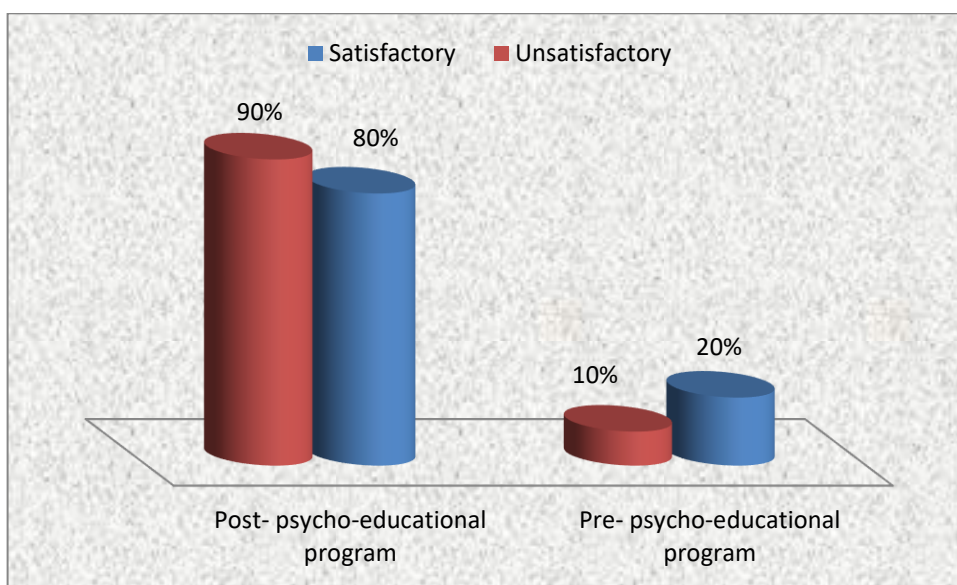


Figure (2): Total nurses' Knowledge Level regarding delirium Pre and Post psycho-educational program (n=50)

Table (3): Differences in nurses' Total practices Mean Scores about delirium Pre and Post psycho-educational program (n=50)

Practices items	Pre-psycho-educational program	Post-psycho-educational program	t-test	P-value
Total practices scores	52.22±20.33	94.33±6.67	24.56	0.001**

(**) highly statistical significance at $p < 0.001$

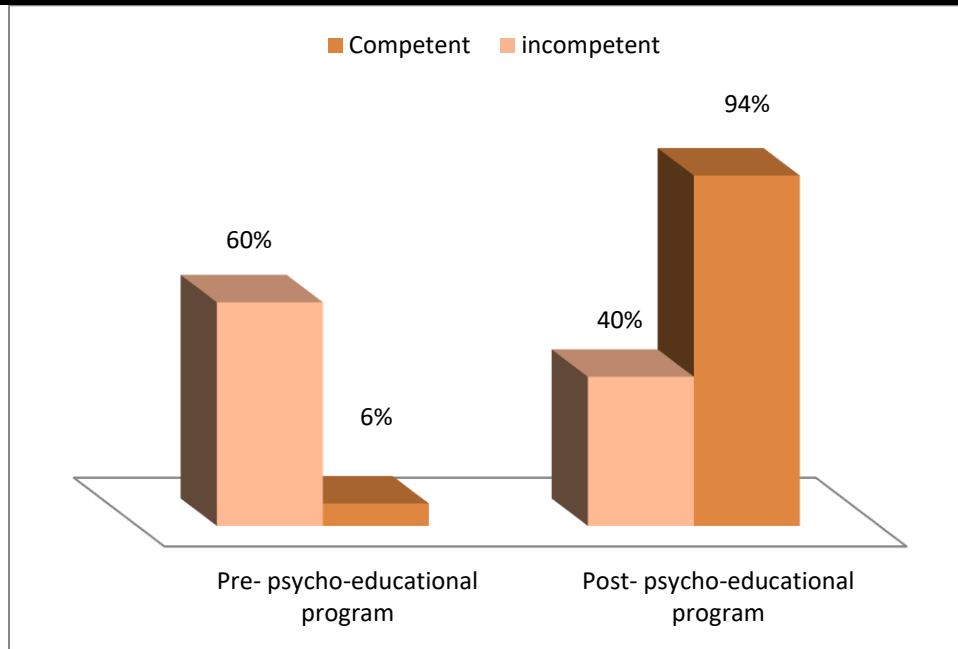


Figure (3): Total nurses' practice Level regarding delirium Pre and Post- and psycho-educational program (N= 50)

Table (4): Correlation between total knowledge score and total practice score of the studied nurses' pre and post-psycho-educational program (n=50).

Correlation	Pearson correlation coefficient			
	Total practice score			
	Pre- psycho-educational program		Post-psycho-educational program	
	r	P	r	P
Total knowledge score	.443	.000**	.634	.000**

** Correlation is significant at the 0.001 level.

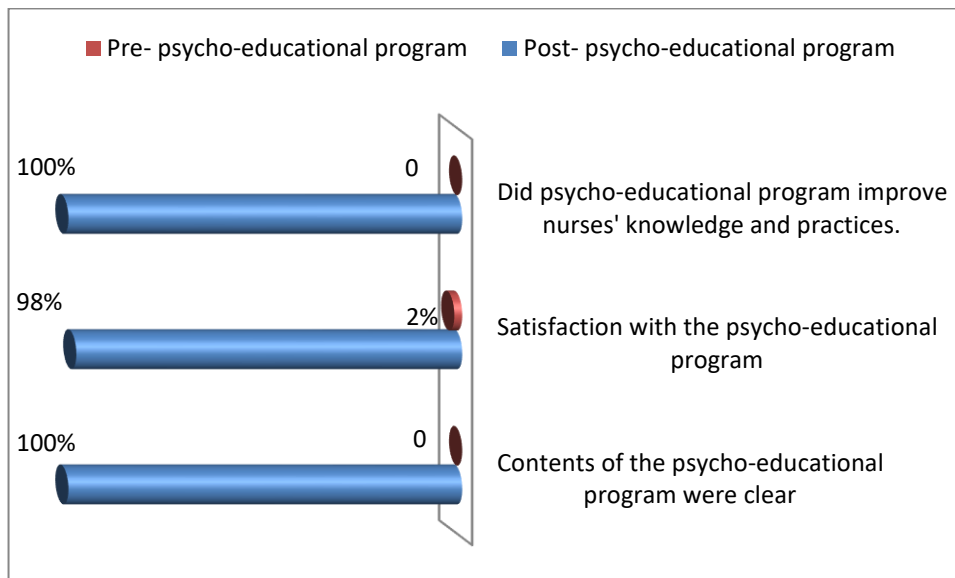


Figure (4): Nurses' satisfaction with psycho-educational program (n= 50)

Discussion:

Delirium is a medical emergency that requires personnel to respond right away. Thus, before suitable measures can be put into place, delirium must be identified and assessed. The patient's delirium is reduced and their physical and mental equilibrium is restored thanks to the therapies. Previous research has demonstrated that several nursing treatments are highly successful in improving the management of delirium in older adults and can dramatically lower the incidence of delirium. Enhancing the care given to elderly patients in hospitals can be achieved through equipping nurses with the appropriate information and abilities (**Ghaeli et al., 2020**). There is a widespread belief that ICU nurses did not receive adequate delirium training, as evidenced by numerous research. The primary cause might be the absence of in-service training programs, which are crucial for raising the standard of care for patients suffering from delirium. Therefore, the current study's goal was to evaluate the impact of psycho-educational programs on nurses' performance regarding the care of patients with delirium in the intensive care unit.

The results of the current study show that, with a mean age of 26.7 ± 4.5 years, three-fifths of the nurses under investigation were older than 25. This result is consistent with the findings of the study "Learning Needs Assessment of Pediatric Nurses Regarding Delirium and Its Barriers of Screening at Intensive Care Units" by **Abusaad et al. (2019)**, which discovered that the average age of nurses was 29.32 ± 4.72 . Given that 60.7% of the nurses in this study had worked in the ICU for fewer than five years after graduation, this age is regarded as early for exposure to working in an ICU setting.

The findings of **Weheida et al. (2019)** and **Lieow et al. (2019)** regarding the "Effectiveness of an Advanced Practice Nurse-led Delirium Education and Training Program" and the "Relationship between Nurses' Burnout and Implemented Evidence-Based Guidelines in Intensive Care Units" respectively, are supported by the observation that half of the study sample was under 30 years old.

The majority of nurses were found to be women, according to the study. **Pinto & Biancofiore (2021)** reported that the majority of the sample in their Italian study, "The ABCDE bundle: A survey of nurses' knowledge and attitudes in the intensive care units," were female nurses.

According to the study, three-fifths of the nurses under investigation had graduated from the Technical Institute of Nursing. This finding is consistent with research published by **Selim & Ely, (2019)** "Delirium: the under-recognized Syndrome: a survey of Healthcare Professionals' Awareness and Practice in the intensive care units," and by **Awad, (2019)** "Critical Care Nurses' Knowledge, Perception and Barriers Regarding Delirium

in Adult Critical Care Units," which found that a higher proportion of nurses with a Technical Institute of Nursing graduates than those with a bachelor's degree.

More than two-fifths of the nurses in the current study had worked in the intensive care unit (ICU) for less than five years. This finding may be explained by the fact that the majority of the nurses in the study were under thirty years old. The results of this study were consistent with those of a prior investigation by **Selim & Ely (2019)**, which found that the average tenure of ICU nurses is $5.8 + 3.7$ years, with roughly half of them working for less than five years. The current findings, however, are not consistent with those of **Tsang et al. (2019)**, who found that the average age of ICU nurses was 9.8 ± 9.0 years old after conducting a "Qualitative descriptive study to explore nurses' perceptions and experience on pain, agitation, and delirium management in a community intensive care unit."

In terms of residency, the current study found that fewer than 75 % of the study nurses lived in cities. The results of **Weheida et al. (2018)**, who discovered that 75% of study nurses reside in rural areas, do not align with our findings.

According to the results of the current study, the majority of the nurses who were studied felt that doctors were the primary source of information when it came to caring for delirium patients in intensive care units. From the perspective of the researchers, it proved that nurses learned from reliable sources.

According to the researchers, the results of the current study demonstrated a highly statistically significant improvement and difference in the nurses' Total knowledge Mean Scores about delirium Pre and Post psycho-educational program. This suggests that the implementation of the psycho-educational program had positive effects.

Concerning the nurses under study, 90% of them had a decent level of knowledge about delirium following a post-psycho-educational program, while the majority of the nurses under study had an entirely unsatisfactory level of knowledge before the program. According to the researcher, there may be a lack of delirium guidelines, supervision, education gaps during training, lack of funds for regular workshops, and an absence of ongoing educational programs or sessions regarding this intervention as reasons for the lack of awareness of delirium among nurses. According to a study conducted in Jordan, "Knowledge and Nursing Practice of Critical Care Nurses Caring for Patients with Delirium in ICUs," nurses' level of knowledge is in line with the findings of the previous study by **Hamdan-Mansour et al. (2019)** and found that nurses' knowledge level about ICU delirium is low.

This result is also consistent with that of **Riekerk et al. (2019)**, who investigated "Limitations and

practicalities of CAM-ICU implementation, a delirium scoring system, in a Dutch ICU" and found that the sample under study did not possess sufficient knowledge regarding the possible impact of delirium on the length of mechanical ventilation. Similarly, researchers **Fick et al. (2019)** discovered that nurses in their study knew a little bit about delirium. This finding aligns with numerous other prior research studies (**Abusaad et al., 2019, Selim & Ely, 2019, Ramoo et al., 2019, Coyle, 2019**) that discovered the majority of nurses lacked insufficient knowledge.

The current study's findings demonstrated a highly statistically significant improvement in the investigated nurses' overall knowledge mean score, as well as a difference between the nurses' mean scores regarding delirium before and after the psycho-educational program. Furthermore, the majority of them knew enough about post-psycho-educational programs to be considered knowledgeable. From the perspective of the researcher, this demonstrated how crucial it is to introduce psycho-educational programs for nurses to enhance their expertise. These findings confirm that in-service educational programs help studied nurses address the issue through practical training and that need-based training is useful in improving knowledge about caring for patients with delirium.

Throughout the educational intervention, the in-service educational program catalyzed them to learn the information they needed about the case problem, offer fresh approaches to solving it, and make connections between theoretical knowledge and actual clinical issues. All delirium-related elements were covered in the training that followed the in-service education.

Many earlier studies (**Ali et al., 2022; Park & Gu, 2023; Kim & Lee, 2024; Varghese et al., 2024; Van De Steeg et al., 2020**) have reported improvements in nurses' knowledge. Additionally, compared to the nurses' pre-intervention program, the post-intervention program had statistically significantly more knowledge.

In the same context, this result is consistent with the findings of **Gesin et al. (2022)**, who discovered that the educational program's execution resulted in a significant rise in the mean score of ICU nurses' knowledge, which was sustained at the follow-up evaluation regarding delirium. As a result, the intended educational effort is successful in spreading awareness of delirium. The nursing profession's expertise was greatly impacted by the introduction of the educational curriculum. The strong statistical significance variations in all examined knowledge sub-items before and after the program's implementation served as evidence for this. These findings concur with those of **Younis & Abo Elfetoh, (2020) & Morsy et al., (2021)**, who found a statistically significant difference between the mean pre- and post-test scores of nurses' knowledge after the educational program.

The present study's findings showed a highly significant improvement in the nurse's overall delirium practices both before and after the psycho-educational training. According to the researchers, the program's psycho-educational approach was successful in enhancing nurses' understanding, which in turn led to better practices. Multiple authors reported on this improvement in nurses' practices: (**Oh, 2019; & Lieow et al., 2019**). They found that following the program's adoption, nurses' overall mean score improved. Furthermore, there was a statistically significant difference in the mean of nurses' total practice scores before and after the educational program.

Studies by (**Gesin et al., 2022 & Lieow et al., 2019**) show that in-service education is a useful tool for developing nurses' skills. The majority of the research on education and training interventions for ICU delirium focused on enhancing the abilities of nurses, and they suggested that in-service education could help improve nurses' knowledge of delirium in ICUs. This outcome is consistent with another research project by **Solberg et al. (2019)**, which found that the introduction of the educational program enhanced nurses' practice in delirium evaluation. Additionally, a highly statistically significant rise in the mean score of nurses' practices regarding the assessment of delirium immediately following implementation and follow-up evaluation of the educational program was discovered in a study conducted by **Varghese et al. (2024)**.

Regarding the delirium practices of the nurses under study, it was found that nearly all of them had competent levels of practice following the psycho-educational program, but three-fifths of the nurses under study had incompetent levels of practice before the program. From the perspective of the researcher, the lack of experience can be attributed to an increase in patients and workload, as well as inadequate training, supervision, and routine nursing evaluation. Moreover, imitations formed the basis of nurses' practice. This conclusion aligns with the research conducted by **Hamdan-Mansour et al. (2019)**, which indicated that most of the sample had little experience managing intensive care units as nurses.

Numerous authors (**Rawson et al., 2019; Oh, 2019; & Lieow et al., 2019**) detailed this shift in nurses' practices. They saw an improvement in the overall mean scores of nurses following the program's implementation. Furthermore, a statistically significant difference was observed in the mean cumulative practice scores of nurses before and after receiving the instructions. The development of nurses' skills was aided by in-service training.

In a similar vein, **Oh (2019)** found that, following the implementation of the educational program, the majority of ICU nurses had the highest mean score practices in her previous study, "The effectiveness of clinical practice education using the checklist on the performance of delirium care for nursing students."

The results of this study demonstrated that all of the nurses reported a significant increase in the mean sub-items of the ICU nurses' practice scores toward patients who were experiencing delirium; these scores were higher both immediately following implementation and at the follow-up evaluation than they were in the assessment conducted before the educational program's implementation. The majority of ICU nurses had the highest mean score practices following the implementation of the educational program, according to earlier studies by **Park & Gu, (2019)** & **Oh, (2019)**, which classified which sub-items of practice regarding delirium, as the assessment of risk factors and nursing intervention of delirium.

The learners had the chance to practice delirium screening before to interacting with actual patients through lectures, video presentations, and group discussions. ICU delirium and CAM-ICU screening have also been demonstrated to be effectively taught through training (Elliott, 2014). This was included in the study because it successfully improved the nurses' skills as determined by competency checks conducted both immediately after the program and three months later. It did this by combining theoretical and practical practice. Nevertheless, **Stewart & Bench's (2019)** investigation discovered that while delirium screening had initially increased, it had not continued over time. They outlined several reasons why increased comprehension of delirium and sedation in intensive care units did not inevitably result in better compliance.

The current investigation found a substantial relationship between the pre-and post-psycho-educational program total knowledge and total practice scores among the nurses under study. Increasing knowledge results in appropriate practices, according to the researchers' perspective. This may be accounted for by the fact that nurses who are less knowledgeable about delirium in the intensive care unit are more likely to practice nursing at a lower level in terms of managing it effectively. Some nursing treatments have been demonstrated in earlier research to be highly successful in improving the management of delirium in older adults and to be able to dramatically lower the incidence of delirium. According to **Weheida et al. (2018)**, equipping nurses with the appropriate knowledge and abilities can help to improve the care given to elderly patients in hospitals.

Similarly, **Saleh et al. (2020)** found that the teaching program in this study had a favorable outcome when implemented in Yemeni ICU nurses. This was the conclusion drawn from their study, "Assessment of Nurses' Knowledge and Practices Regarding Care of Patients with Delirium". They observed a noticeable improvement in their understanding of delirium and in the way they cared for patients as nurses.

However, this outcome differs from that of **El-Nosary et al. (2019)**, who investigated the knowledge and practices of nurses regarding delirium among patients in the intensive care unit at the emergency hospital. Their

findings indicated that there was no relationship between the nurses' practice and their understanding of delirium. This could be explained by the fact that nurses with lower levels of effective nursing practice in the management of delirium were more likely to be less knowledgeable about the condition in the ICU. This conclusion is not consistent with the findings of **Younis & Abo Elfetoh (2021)**, who found no link between intensive care nurses' nursing practice and their understanding of delirium.

According to the current study, practically all of the examined nurses expressed satisfaction with the psycho-educational program and stated that the program's content was understandable. Regarding how the psycho-educational program affected their knowledge and practices, they all said that it enhanced them. This outcome illustrates the value of implementing the psycho-educational program, which satisfied the needs of the nurses and gave them the necessary skills and knowledge. indicated the accomplishment of the study's objective.

Conclusion:

Based on the current study's findings, the study concluded that delirium psycho-educational programs improved nurses' performance in terms of caring for delirium patients in intensive care units.

Recommendations:

Based on the current study's findings, the following recommendations were made:

- Giving nurses access to a carefully thought-out psycho-educational program to enhance their delirium performance
- Psychological support should be provided to educate nurses and highlight potential actions that are necessary to aid in psychological adjustment.
- To ensure that all nurses caring for patients in the critical care unit have access to enough information about delirium, brochures, and booklets should be prepared and distributed.
- Generalizing the study's findings requires repeating it with a larger sample drawn from throughout Egypt.

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