The Effect of the Reflective Debriefing Strategy on Nursing Students' Self-Efficacy and Clinical Performance of Blood Pressure Measurement

Samar Emad Mohammed Helal⁽¹⁾, Lamiaa Ismail Zaki Keshk⁽²⁾, Mervat Ebrahim Aly El Dahshan⁽³⁾

(1) Nursing Specialist at Mit Ghamr Oncology Center

(2) Professor of Nursing Administration-Faculty of Nursing-Helwan University

(3) Professor of Nursing Administration- Faculty of Nursing- Menoufia University

Abstract

Abstract: Reflective Debriefing Strategy is considered one of the main strategies that allow students to be self-directed in their learning. Consequently, it has a great impact on nursing students 'critical thinking, clinical performance, and also self-awareness as their core are a reflection on their performance. Aim: To investigate the effect of reflective debriefing strategy on nursing students' self- efficacy and clinical performance of blood pressure measurement. Setting: This study was conducted at the Faculty of Nursing, Zagazig University 1 st grade. Sample: A simple random sample technique (probability) of 280 nursing students who enrolled in the fundamental of medicalsurgical nursing course in the 1st grade during the academic year 2023 -2024 were included. Tools: Three tools were used which are Reflective Debriefing Experience Scale, Blood Pressure Self-Efficacy Scale, and Blood Pressure Evaluation Rubric. Results: More than four-fifths of the studied nursing students gained a high level of debriefing experience during the post-test phase compared with pre- test. While, the majority of the studied nursing students gained a high level of self-efficacy regarding blood pressure measurement during the post-test phase compared with pre- test phase. In addition, more than four-fifths of them had a high level of clinical performance regarding blood pressure measurement during the post-test phase compared with pre- test phase. Conclusion: There was a high statistically significant positive correlation among reflective debriefing strategy selfefficacy and blood pressure performance among studied nursing students through program phases. **Recommendations:** Training program need to be conducted for all nursing students to be more skillful about the reflective debriefing strategy application in their studying and then their career after graduation.

Keywords: Clinical performance of blood pressure measurement - Reflective Debriefing strategy - Nursing Student's Self- Efficacy.

Introduction

Education is consistently important issue as it considered one of the imperative aspects that include essential skills, abilities, and knowledge that help to improve the overall growth, progress and development of all individuals, community and nations. Any educated person has eager to success and achievement to accomplish his desired goals and objectives. In addition to render an efficient contribution to promote the community well fare and well-being. When educating nursing students, they need a balance between the knowledge, theories which obtained in the classroom, applying and transferring these theories in the clinical setting and dealing with the real situations. So, it is important to understand the factors that influence on the academic performance of the

nursing students to improve their knowledge and clinical performance, able to accomplish their desired objectives and efficiently contribute towards the well- being of their communities (*El-awady et al., 2022*).

Nursing is a demanding profession that requires a unique blend of technical skills, empathy, and the ability to adapt to everchanging situations. In the fast-paced healthcare environment, nurses are often focused on providing quality care to patients, but it is equally important for them to engage in self-reflection. This regular introspective practice holds immense importance in nurse's professional personal and development, contributing to enhanced patient care, improved communication, and overall job satisfaction (Nurs, 2024).

Nursing students need good preparation for the rapidly changes and complexity of the health care demands through closing the gap arose between the clinical practices and the nursing theory, providing suitable opportunities for performing the required skills effectively, facing any challenges in the nursing work, and well academic preparation. Finally, to meet the needs of the population and meet the future demands of this generation and other generations that follow, every nurse must be successful in their education, close the gap between the supply and demand and avoid any academic failure. Entering the workforce as a new registered nurse (RN) requires skills, knowledge and attributes to begin to safely deliver patient care (Harrison et al., 2020 and El- awady et al., 2022).

Reflecting on practice is considered to be an important aspect of nursing. The value of reflective practice is widely acknowledged due to its significant role in nursing education, clinical and theoretical nursing assessment and revalidation requirements. Advocates of reflective practice understand that a competent reflective practitioner repeatedly reflects on experiences and continually learns from those experiences to the benefit of future actions. Reflective practice is now a fundamental component of both theoretical course work and clinical practice for nurses and positively impacts on both personal and professional (Ingham, 2021).

Debriefing is considered critical а component in skills development and useful strategy to bridge the theory-practice gap. It is defined as students' reflection on their performance and educators providing feedback. The educator facilitates a constructive discussion while maintaining a stance of genuine curiosity about learners' concerns in the debriefing process. As a result, an emphatic learner-educator relationship is established which encourages the reflective practice in an interactive manner. The process of selfevaluation and constructive feedback enables the learners to identify areas lacking in their performance. Debriefing facilitates learning, improves performance and ultimately improves patient outcomes. It allows students to think and critique their practices, which fosters clinical reasoning and critical thinking.

Learners acknowledge the positive impact of debriefing to their skills' development. The improvement in psychomotor skills was evident with the application of the debriefing *(Sultan et al., 2024)*.

In healthcare simulation, the debriefing process takes on added significance, acting as a conduit for transforming simulated experiences insights four debriefing into actionable modalities, self-reflection, self-debriefing, teledebriefing and facilitated debriefing are commonly employed to varying extents in healthcare simulation education. Each modality carries its distinctive features, advantages and necessitating challenges, а nuanced understanding of their applications to optimize their effectiveness (Loomis et al., 2022).

Self-efficacy is a vital component for independent performance in nursing. Bandura has described self-efficacy as one's belief in the ability to perform the desired functions in their role. Self-efficacy is an important motivator for medical and nursing students' development and is key to nursing students' and clinical nurses' performance in their roles. Therefore. developing and implementing education programs which facilitate the development of self-efficacy is essential for healthcare professionals. Over the past 20 years, selfefficacy has been linked to academic achievement and workplace performance. Selfefficacv is important for healthcare professionals' communication skills, where training in these skills can enhance their performance and self-efficacy (Mata et al., 2021).

Clinical simulation allows participants to have a better perception of a given knowledge, evaluating multiple facets, listening to peers who disagree with them, developing a convincing argument, based on theory, often accepting that their line of reasoning was wrong and that it is necessary to change their opinion. Facilitators who promote this reflection are supposed to provide assistance in this learning process (*Oliveira et al, 2024 and El-awady, 2022*).

Significance of study

Reflective Debriefing Strategy (RDS) is considered one of the main strategies that allow students to be self-directed in their learning.

Consequently, it has a great impact on nursing students' critical thinking, clinical performance and also self-awareness as their core is a reflection on their performance. Additionally, in RDS students are active participants and build their learning. So, RDS is considered a student-centered strategy and а transformational process. As they help to heighten awareness of the student on how to improve their practical performance. It is about active thinking about how you did, what you did well and what you did not do so well. With the aid of a simple prompt question such as what might I do better next time? Or what could I do differently? (Wareing et al., 2020) and Alrashidi et al., 2023).

Reflective debriefing Strategy (RDS) had a positive influence on nursing students' clinical performance and its efficacy, moreover observation, evaluation, critical thinking skills, awareness and thought reflective debriefing process. The feedback of the study group about effectiveness of the reflective debriefing strategy, it was found that 100.0% of students agree that RDS was improved their selfevaluation; Realize the value of reflection on their performance. As well as the majority of students agree that Reflective Debriefing Strategy (RDS) enabled them to analyze their performance, retrieved what they learn and did, identified their own weaknesses, express themselves, improved their thoughts, became more aware of their strength about skills, identified their own learning needs, improved observation skills reflect on any task (E-gebaly, *2021*).

Based on clinical experience of the researcher and reviewed literature, there is a gap about reflective debriefing strategy among nursing students that can be filled by the results of this research. So, this study was conducted to investigate the effect of reflective debriefing strategy on nursing students' self- efficacy and clinical performance of blood pressure measurement.

Aim of the research

The aim of the current study is to investigate the effect of reflective debriefing strategy on nursing students' self- efficacy and clinical performance of blood pressure measurement. To fulfill the aim of this study, the following two stated research hypotheses were formulated:

Research hypotheses:

- 1. Nursing students who are engaged in reflective debriefing strategy exhibit higher self-efficacy of blood pressure measurement.
- 2. Nursing students who are engaged in reflective debriefing strategy exhibit higher clinical performance in measuring blood pressure.

Subjects and Method

The subjects and method for this study was portrayed under the four main items as follows: I- Technical item. II- Operational item. III- Administrative item. IV- Statistical item.

I- Technical Item:

The technical item includes research design, setting and study sample and tools for data collection.

1- Study design:

A quasi –experimental design was used in the conduction of this study.

2- Study Setting:

This study was conducted at the Faculty of Nursing, Zagazig University 1 grade 1 ,who enrolled in medical- surgical course during the academic year 2023-2024 , the faculty included seven scientific departments: Nursing administration, psychiatric and mental health nursing, medical surgical nursing, maternal and newborn health nursing, pediatric nursing, community health nursing, and geriatric nursing.

- **3- Study sample:** A group of nursing students were used to achieve aim of the study.
- **a. Sample size;** Based on statistical administrative records of university (2023 2024). 1000 nursing students were enrolled in the Fundamental of Medical-Surgical Nursing course in the 1st grade during the academic year 2023 -2024 in the abovementioned setting during the time of data collection.

Sample size of was determined by using Thompson, (2012) formula to assess sample size of nursing student.

- Population size= (1000) students.
- The estimated frequency= 50%.
- Acceptable error= 10%.
- Confidence limits= 95%.

N= is the total number of nursing's student (1000). Z= confidence level at 959(1, 96) (1, 96 x 1, 96=38416). d= Error of population (0, 05) (0,05x 0, 05= 0, 0025). Probability= 50% (0, 5). 1-p= (0, 5). D² ÷ Z²= (0, 0007). P (1-p) = (0, 25). N × n(1 - n)

$$n = \frac{N \times p(1-p)}{\left[[N-1 \times (d^2 \div z^2)] + p(1-p) \right]}$$

Numerator = (250) (277, 98), Total outcome= 278. **Denominatc** = 0, 89935.

The sample was increased to 280 to avoid attrition errors.

Reference; Thompson, (2012).

b. Sampling technique; A simple random sample technique was used in the present study to achieve study aim, which entails nursing students in the above-mentioned setting during the time of data collection. A list of all nursing students enrolled in the Fundamental of Medical-Surgical Nursing course in the 1st grade during the academic year 2023 -2024 was prepared. Each nursing student was marked with a specific number (from 1to 1000). Finally, samples were taken randomly from the box by randomly selecting folded pieces of paper with replacement so that each nursing students had an equal chance of being included in the study (280 nursing students).

4-Tools for data collection:

To achieve the aim of this study three tools were used which are: Debriefing Experience Scale (DES), Blood Pressure Self-Efficacy Scale (SES), and Blood Pressure Evaluation Rubric. Personal characteristics including sex, age, marital status, residence were collected too.

Tool I: Debriefing Experience Scale (DES):

The scale was developed by *El- gebaly*, (2021) to determine students' opinion about reflective debriefing strategy. The tool

consisted of 36 items divided into four parts; The 1st part: Effectiveness of reflective debriefing strategy (15 items) and the 2nd part: Applicability of reflective debriefing strategy (6 items). In addition to the 3rd part: 10 open questions, divided into 5 questions for (strong points) and 5 questions for (weak points) and the fourth part: The rubric assessment for debriefing reflection (5 items).

The scoring system:

This tool consisted of 36 items with a total grade (114). It classified into four parts. The 1st is consisted of (21 items) with a total grade (84). Nursing student responses were assessed by using a 4-point Likert scale that assess nursing student's responses as (1) strongly disagree, (2) Disagree, (3) Agree & (4) Strongly agree. It consisted of (10 items) with a total grade (10). The 3rd part is related to open questions to assess nursing student's perception regarding strong point (5 questions) and week point and improving suggestion of reflective debriefing strategy (5 questions). One grade was given for correct answers and zero grade for wrong answers. As well, the 4th part is related to rubric assessment for debriefing reflections. It consisted of (5 items) with a total grade (20). It used a 4-point Likert scale that assess nursing student's responses as (1) Un-acceptable, (2) Novice, (3) Aware & (4) Reflective. They were classified into three levels as the following (statistics) and (Shalaby & Hassan, 2019).

- Low level: If the total score was less than 60%, it means less than 69 points.
- Moderate level: If the total score was equal or more 60% to less than 75%, it means less than $\ge 69 < 86$ point.
- **High level:** If the total score was equal or more 75%, it means equal or more than 86 points.

Parts	Items	Items N	Multiply by	Total score
The 1 st part	Effectiveness of reflective debriefing strategy.	15	4	60
The 2 nd part	Applicability of reflective debriefing Strategy.	6	4	24
The 3 rd part	Open questions	10	1	10
The 4 th part	Rubric assessment for debriefing reflections.	5	4	20
Total		36		114

Table (I): Scoring distribution of debriefing experience regarding blood pressure measurement

Tool II: Blood Pressure Self-Efficacy Scale (SES):

The Blood Pressure self-efficacy Scale was developed by **Sherer**, **Maddux**, (**1982**). It is adopted by researcher. This scale is used to assess nursing students' self-efficacy in performing blood pressure procedure. It consisted of 20 items; divided into three dimensions; The 1^{st} part: pre-care phase (4 items), the 2^{nd} part: Ongoing- care phase (14 items) and the 3rd part: Post- care phase (2 items) with a total score of (80).

The scoring system:

Students responses were assessed using a-4 point likeret scale as (1) strongly disagree, (2) Disagree, (3) Agree & (4) Strongly agree. The total score range from 20-80. The total grades for all items were summed up and then converted into a percentage score. They were classified into three levels as the following (statistics) (*Shalaby & Hassan, 2019*).

- Low level: If the total score was less than 60%, it means less than 48 points.
- Moderate level: If the total score was equal or more 60% to less than 75%, it means less than $\ge 48 < 60$ point.
- **High level:** If the total score was equal or more 75%, it means equal or more than 60 points.

Table (II): Scoring distribution of self-efficacy regarding blood pressure measurement

Parts	Items	Items N	Multiply by	Total score
The 1 st part	Pre-care phase	4	4	16
The 2 nd part	Ongoing-care phase	14	4	56
The 3 rd part	Post-care phase	2	4	8
Total		20		80

Tool III: Blood Pressure Evaluation Rubric:

This observational Rubric adopted from *El-gebaly*, (2021). It used to assess students' performance. It consists of the steps that should be followed before, during and after measuring blood pressure. Clinical performance regarding blood pressure measurement consisted of 11 items, which divided into three dimensions; The 1^{st} part: skill preparation (4 items), the 2^{nd} part: set & measurement (5 items) and the 3^{rd} part: post care (2 items).

The scoring system:

Students response were assessed by using a 4 point likert scale as (0) poor, (0, 5) Good, (1) Very good, (1, 5) Excellent. The total grades for all items were summed up and then converted into a percentage score. The total score ranges from 11 to 24, they were classified into two levels as the following (statistics) (*Shalaby & Hassan, 2019*).

- **Competent level:** if the total score was equal or more 75%, it means equal or more than 18 points.
- In competent level: if the total score was less than 75% (less than 18 points).

Parts	Items	Items N	Multiply by	Total score
The 1 st part	Skill preparation	4	1.5	6
The 2 nd part	Set & measurement	5	3	15
The 3 rd part	Post care	2	1.5	3
	Total	11		24

Table (III): scoring distribution of performance regarding blood pressure measurement

II) Operational design:

It includes the preparatory phase, content validity of the modified tool and reliability, ethical consideration, pilot study and field work.

A. The Preparatory phase:

It includes reviewing of related literature and theoretical knowledge of various aspects of the study using books, articles, internet, periodicals and magazines to develop tools for data collection. In this phase the researcher statistically determined the number of the study sample and selected the suitable setting for this study. The setting was selected based on the flow rate of the students and nearest place for the researcher.

B. Validity and reliability:

Validity of the Instrumentation

Validity of the tools was done namely face validity and content validity. It was tested by jury group consisted of five experts (Professors) in nursing administration from faculty of nursing, Ain Shams University and Cairo university. Jury group members judge tools for comprehensiveness, accuracy and clarity in language. Based on their recommendation's correction, addition and / or omission of some items were done.

Content Validity:

Content validity is the degree to which individual items capture the theoretical content domain of a construct. Additionally, it refers to the extent to which a test covers all aspects of the construct it intends to measure. A test has high content validity if it represents a sample of items relevant to the construct (*Roebianto et al.* 2023). Minor modifications were done based on the jury recommendations.

C) Reliability:

It is the consistency of measuring instrument. Moreover, it is a degree to which the used tools measure what was supposed to be measured with the same way each time & under the same condition with the same subjects (*Huang et al., 2023*). The statistical equation of Cronbach's alpha reliability coefficient normally ranges between 0-1, (*Malkewitz et al., 2023*). The following tables show the degree of Alpha Cronbach for the used tools.

D) Ethical consideration:

Written approval was obtained from the Scientific Research ethics committee of Faculty of Nursing - Helwan University. An official permission was obtained from dean of the faculty of nursing -Zagazig University. A written consent was obtained from the nursing students after informing them about the purpose and nature of the study. The researcher maintaining anonymity assured and confidentiality of all nursing student data. Confidentiality was maintained on data collection forms by using codes to identify participants instead of names or any other personal identifiers.

E) Pilot study:

A pilot study was carried out on 10% (28 nursing students) of total number of the studied nursing student group under study to test the applicability, clarity and efficiency of the tools. Nursing student participated in the pilot study were included in the main study sample as no modifications were done.

F) Field Work: It includes the following:

• Meeting with nursing labs supervisor to take permission and assess environment of the lab and blood pressure devices to ensure that it is suitable for applying training program. Moreover, the free time for labs was allocated. Written scheduling for application of educational program of reflective debriefing strategy for blood pressure measurement sessions were determined. Meeting with the students (nursing student 1st grade) to obtain written and oral consent were done. The total number of sessions was 14 sessions. It classified into theoretical and practical sessions.

F.1. Assessment Phase:

Process of reflective debriefing:

The process of RDS consists of three phases which are; 1) assessment and preparation of students, 2) application, 3) evaluation of student performance. The assessment and preparation phase occurs before the conduction of RDS.

Preparation phase (Preparation of researcher-Preparation of content- Preparation of students):

1-Preparation of researcher:

The researcher reviewed recent researches about reflective debriefing strategy in order to be knowledgeable about its application in teaching of the blood pressure procedure, guided by the study advisors.

2- Preparation of content:

The sessions classified into theoretical and practical sessions. The total number of theoretical sessions was 2 sessions. The first one: introduction about blood pressure overview and blood pressure measurement (procedure steps), The second one: done for discussing the theoretical part of reflective debriefing sessions.

3-Preparation of students:

Orientation and training sessions about reflective debriefing meaning, importance, technique, and stages were carried out to nursing Students .Educator create pre-brief sessions to illustrate the purpose, the learning objectives, the process of RDS and what is expected of them and sets the ground rules. Thus, the educator should identify to what extent students can reflect and prepare them well to recall and reflect easily and classify his feelings, thoughts related to the experience.

F.2. Planning Phase:

It involved final construction and preparation of tool and testing its reliability. Final approvals were obtained from the administrative authorities of dean of faculty of nursing; Zagazig University. Preparing practical and theoretical units in Fundamental of Medical-Surgical Nursing course content which include (blood pressure measurement), reflective and debriefing strategy and its application. Then the researcher determines the suitable time for the nursing student to be free and can demonstrate educational program for application of reflective debriefing strategy for blood pressure measurement.

F.3. Implementation Phase:

The total number of sessions was 14 sessions needed for implementation of application of educational program of reflective strategy for blood debriefing pressure measurement sessions. The two theoretical sessions given for all students in the lecture class. Each one consumed 1:30 hours. The practical part for implementation of blood Pressure measurement (procedure steps) was carried out to each student by observational checklist; it was done to all students (nursing students) through one month (November, 2023). Educational program continues 12 sessions; each one lasted for about 3 hrs. The two questionnaires; Questionnaire to assess nursing students' self-efficacy of blood pressure measurement and questionnaire to assess effectiveness of reflective debriefing strategy on nursing students were distributed to each student before implementing the program. The researcher applies the procedure in all steps in front of students. Demonstration and de-remonstration was done. As the instructor was demonstrating the procedure followed by the student's re-demonstration of the procedure. Researcher used the prepared guided table that briefly organize and summarize the stages/phases of reflective debriefing strategy. The researcher has conducted the sessions of reflective debriefing after demonstration of the procedure. Then each student reflected individually on their performance in a written form by using a reflection template that was prepared by the researcher. Then the students and researcher discussed together to provide suggestions to enhance the further performance of the procedure, the researcher role was facilitator.

F. 4. Evaluation Phase:

The same two questionnaires were used to evaluate student performance again immediately after implementation of training sessions (post-test) after implementation the application of educational program of reflective debriefing strategy for blood pressure measurement sessions, checklist was used for all students to evaluate students' performance and the outcomes of the implemented blood pressure measurement (procedure steps). It took about one month (December, 2023). Follow up test was used to assess student performance three months after implementation of program using the same questionnaires. It took one month follow up test/ April-2024).

III) Administrative design:

An official permission was obtained from the dean of Faculty of Nursing; Zagzig University in which the study was conducted. A letter was issued to them from the Faculty of Nursing; Helwan University explains the aim of the study for obtaining the permission for data collection.

IV) Statistical analysis

Data entry and analysis were performed using SPSS statistical package version 26. Categorical variables were expressed as number and percentage while continuous variables were expressed as (mean ±SD). Chi-Square $(\chi 2)$ was used to test the association between row and column variable of qualitative data. ANOVA test (F test) was used to compare mean in normally distributed quantitative variables in more than two groups. Pearson correlation was done to measure correlation between quantitative variables. For all tests, a two-tailed p-value ≤ 0.05 was considered statistically significant, P-value ≤ 0.01 was considered highly statistically significant. While p-value> 0.05 was considered not significant. Eta square $(\eta 2)$ is used to measure the effect size. Additionally, it is exploring effect of reflective debriefing strategy on nursing students' self- efficacy and clinical performance of blood pressure measurement. The referential framework for identifying the effect size for Anova-test value (Cognitive & Brain Science Unit, 2021 and Lakens, 2013).

Table (IV): The referential framework for interpretation the effect size of Eta square

Effect size η2	Interpretations
0.01 to < 0.06	Small
0.06 to < 0.14	Median
≥ 0.14	Large

Results

Table (1) described personal data of the studied nursing students; It showed that majority (98.2%) of studied nursing students were single. Additionally, four-fifths (80.7%) of the age of the studied nursing students were ranged from 18 - < 19 years old, with a mean age of 18.19 ± 0.39 . Moreover, more than half (56.8%) of them were from rural area.

Table (2) clarified total mean score of debriefing experience during pre, post & follow up among the studied nursing students. As denoted from the table, during the post-test phase, the studied nursing students had higher mean score (101.45 ± 18.6) of debriefing experience, followed by the phase of follow-up test (99.39±21.5) as compared with the phase of pre-test 48.54±28.4 (Total score=144). Moreover, there was a highly statistically

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significant difference among total mean score of debriefing experience during pre, post & three months follow up among the studied nursing students at P = 0.000.

Figure (1) clarified level of debriefing experience during pre, post & follow up among the studied nursing students. It illustrated that more than four-fifths (88.9%) of the studied nursing students gained a high level of debriefing experience during the post-test phase, followed by the phase of follow-up test (82.1%) as compared with the phase of the pretest (13.2%). In addition to presence of difference among studied nursing student at χ^2 =467, P=0.000.

Table (3) clarified total mean score of selfefficacy regarding blood pressure measurement during pre, post & follow up among the studied nursing students. Regarding total, during the post-test phase, the studied nursing students had higher mean score (76.32 ± 9.5) of selfefficacy regarding blood pressure measurement, followed by the phase of follow-up test (74.39 ± 13.2) as compared with the phase of pre-test 33.61 ± 17.3 (Total score=80). Moreover, there was a highly statistically significant difference among total mean score of selfefficacy regarding blood pressure measurement during pre, post & three months follow up among the studied nursing students at P = 0.000.

Table (4) demonstrated total mean score of clinical performance regarding blood pressure measurement during pre, post & follow up among the studied nursing students. As regarding the total, during the post-test phase, the studied nursing students had higher mean score (21.4±4.7) of clinical performance regarding blood pressure measurement, followed by the phase of follow-up test (20.8±5.5) as compared with the phase of pretest 11.1±6.6 (Total score=24). Moreover, there was a highly statistically significant difference among total mean score of clinical performance regarding blood pressure measurement during pre, post & three months follow up among the studied nursing students at P = 0.000.

Table (5) clarified Effect size and η^2 of reflective debriefing strategy on nursing students' self- efficacy during pre, post & three months follow up among the studied nursing students. It revealed that implementing reflective debriefing strategy had positive large effect size on nursing students' self- efficacy during pre, post & three months follow up among the studied nursing students at $\eta^2 = 0$. 673. As when Eta-square value = 0.01 to < 0.06, the effect was considered weak, when it = 0.06 to < 0.14, the effect was considered medium and when it ≥ 0.14 the effect was large. Therefore, this provided enough evidence to support research hypothesis.

Table (6) clarified Effect size and η^2 ofreflective debriefing strategy on nursing

students' clinical performance of blood pressure measurement during pre, post & three months follow up among the studied nursing It revealed that implementing students. reflective debriefing strategy had positive large effect size on nursing students' clinical performance of blood pressure measurement during pre, post & three months follow up among the studied nursing students at $\eta 2=0.412$. As when Eta-square value = 0.01 to <0.06, the effect was considered weak, when it = 0.06 to < 0.14, the effect was considered medium and when it ≥ 0.14 the effect was large. Therefore, this provided enough evidence to support research hypothesis.

Figure (2) illustrated that, there was a high statistically significant positive correlation between (cumulative clinical performance regarding blood pressure measurement & selfefficacy) at r= 0.961 to 0.850 & P= 0.000. Additionally, there was a high statistically significant positive correlation between (cumulative clinical performance & reflective experience) at r = 0.944 to 0.850 & P = 0.000. Moreover, there was a high statistically significant positive correlation between self-efficacy (cumulative & reflective experience) among the studied nursing students at r = 0.940 to 0.850 & P = 0.000.

Table (7) correlation between clinical performance regarding blood pressure self-efficacy and reflective measurement, experience during pre, post & follow up among the studied nursing students. It clarified that, there was a high statistically significant positive correlation between (clinical performance regarding blood pressure self-efficacy; measurement & clinical performance & reflective experience; selfefficacy & reflective experience) during pre, post & follow up among the studied nursing students at r= ranged from 0.976 to 0.850 & P= 0.000.

Personal d	Ν	%	
	Single	275	98.2
 Marital status 	Married	5	1.8
	18- < 19	226	80.7
Age (in years)	≥19	54	19.3
	$\overline{\mathbf{x}} \pm \mathbf{SD}$.19±0.39
	Rural	159	56.8
Residence	Urban	121	43.2
- Sov	Male	114	40.7
- Sex	Female	166	59.3

Table (1): Frequency distribution of personal data among the studied nursing students (n=280).

M-F Ratio-0, 7-1

Table (2): Total mean score of debriefing experience during pre, post & follow up among the studied nursing students (n=280).

Debriefing	Pre	Post	3 months follow up	F Test	P-
experience:	$\overline{\mathbf{x}} \pm \mathbf{S}\mathbf{D}$	$\overline{\mathbf{x}} \pm \mathbf{SD}$	$\overline{\mathbf{x}} \pm \mathbf{SD}$		value
Low	33.92±11.8	45.15±13.3	43.27±13.7		
Moderate	78.58±2.8	72.67±4.6	77.43±7.8		0.000**
High	104.68±11.3	106.47±11.3	107.43±10.7	465	0.000
Total $\overline{\mathbf{x}} \pm \mathbf{SD}$	48.54±28.4	101.45±18.6	99.39±21.5		
*Significant $p \le 0.05$	**Highly sign	ificant $p \le 0.01$	ANOVA Test (F Test)	

*Significant $p \le 0.05$

ANOVA Test (F Test)

Figure (1): Percentage distribution of debriefing experience during pre, post & follow up among the studied nursing students (n=280).





Table (3): Total mean score of self-efficacy regarding blood pressure measurement during pre, post & follow up among the studied nursing students (n=280).

Self-efficacy	Pre	Post 3 months follow up			Р-	
	$\overline{\mathbf{x}} \pm \mathbf{SD}$	$\overline{\mathbf{x}} \pm \mathbf{SD}$	$\overline{\mathbf{x}} \pm \mathbf{SD}$	Flest	Value	
Low	21.69±3.2	30.25±6.8	25.45±6.3			
Moderate	43.77±5.2	48.85±5.2	48.84±7.3	0.50	0.000**	
High	69.06±8.9	78.38±4.7	78.48±4.4	859	0.000	
Total $\overline{\mathbf{x}} \pm \mathbf{SD}$	33.61±17.3	76.32±9.5	74.39±13.2			
*Significant $p \le 0.05$	**Highly signifi	cant p \leq 0.01	ANOVA Test	(F Test)		

Significant p ≤ 0.05

ANOVA Test (F Test)

Original Article

Table (4): Total mean score of clinical performance regarding blood pressure measurement during pre, post & follow up among the studied nursing students (n=280).

Clinical performance	Pre Post		3 months follow up	F Test	P- Value			
-	$\overline{\mathbf{x}} \pm \mathbf{S}\mathbf{D}$	$\overline{\mathbf{x}} \pm \mathbf{SD}$	$\overline{\mathbf{x}} \pm \mathbf{S}\mathbf{D}$		value			
Competent	8.51±4.3	11.64±3.7	11.8±4.7					
In- Competent	21.8±2.1	23.2±1.8	23.5±1.3	292	0.000**			
Total $\overline{\mathbf{x}} \pm \mathbf{SD}$	11.1±6.6	21.4±4.7	20.8±5.5					

^{*}Significant $p \le 0.05$ **Highly significant $p \le 0.01$ ANOVA Test (F Test)

Table (5): Effect size and η^2 of reflective debriefing strategy on nursing students' clinical performance of blood pressure measurement during pre, post & three months follow up among the studied nursing students (n=280).

Interval	Mean	SD	F Test	P value	η	η2	Effect size
Pre-test	11.12	6.6					
Post-test	21.47	4.7	292	0.000****	0.642	0.412 ***	Large effect
Follow up	20.89	5.5					
Total	17.83	7.4					
*Significant $p \le 0.05$	**Highly	signific	ant p ≤ 0.01	I AN	OVA Test	(F Test)	

*Significant $p \le 0.05$ **Highly significant $p \le 0.01$

* Small effect size = 0.01 to < 0.06 **Medium effect size = 0.06 to < 0.14

***Large effect size ≥ 0.14

Table (6): Effect size and η^2 of reflective debriefing strategy on nursing students' self- efficacy during pre, post & three months follow up among the studied nursing students (n=280).

			1 0		U U		
Interval	Mean	SD	F Test	P value	η	η2	Effect size
Pre-test	33.61	17.31					
Post-test	76.32	9.59	950	0.000***	0.920	0.673	Large
Follow up	74.39	13.2	839	0.000	0.820	***	effect
Total	61.44	24.02					
*Significant p < 0.05	**Highly significant n < 0.01						Fest (F Test)

Significant $p \ge 0.03$ * Small effect size = 0.01 to < 0.06

Fightly significant $p \ge 0.01$ **Medium effect size =0.06 to < 0.14 ANOVA Test (F Test)

Figure (2): Scatter dot between clinical performance regarding blood pressure, self-efficacy and reflective experience among the studied nursing students (n=280).



r1: Correlation between self-efficacy and clinical performance regarding blood pressure measurement.

r2: Correlation between reflective experience and clinical performance regarding blood pressure measurement.

r3: Correlation between self-efficacy and reflective experience.

N. B. This scatter dot is a sum of scores of pre, post and follow-up.

 Table (7): Correlational matrix between clinical performance regarding blood pressure measurement, self- efficacy and reflective experience during pre, post & follow up among the studied nursing students (n=280).

veriables		Clinical performance			Self-efficacy			Reflective experience			
variables			Pre	Post-	Follow- up	Pre	Post-	Follow- up	Pre	Post-	Follow- up
	Dra taat	r	1								
Clinical	Pre-test	Р									
performance	Doct Test	r									
blood	rost-rest	P									
pressure	Follow up	r									
pressure	ronow-up	P									
	Pre-test	r	0.938								
		P	0.000^{**}								
Solf officeout	Post-Test	r		0.923							
Self-efficacy		P		0.000^{**}							
	Follow up	r			0.922						
	ronow-up	P			0.000^{**}						
	Dro tost	r	0.938								
	r re-test	P	0.000**								
Reflective	Doct Test	r		0.919							
experience	r ost- Test	Р		0.000**							
	Follow ve	r			0.942						
	ronow-up	Р			0.000^{**}						

Discussion

Reflective debriefing strategy (RDS) is considered an essential tool to help students link theory with practice to enhance the development of clinical knowledge for safe clinical practice. Reflective Debriefing came to serve a similar purpose in clinical practice. Therefore, in RDS students 'learning is selfdirected as they engage themselves in a reflection process of continuous observation, evaluation and the analysis process to identify their weaknesses and develop a plan to enhance the further performance (*El-gebaly, 2021*).

Therefore, the current study was conducted to investigate the effect of reflective debriefing strategy on nursing students' self- efficacy and clinical performance of blood pressure measurement. Discussion of the results is presented in the following sequence.

The current study revealed that the studied nursing students had higher mean score of debriefing experience during post-test followed by the phase of follow-up test as compared with the phase of pre-test. Moreover, there was a highly statistically significant difference between total mean score of debriefing experience during pre, post & three months follow up among the studied nursing students.

From researcher' point of view, these results may be due to the positive effect of a training program on students' debriefing ability and reflective thinking during simulation debriefing which lead to improve critical thinking, problemsolving process, clinical judgment .Thereby improving their learning outcomes. This suggest that debriefing experience could be considered an important tool in to improve clinical outcomes by learning through discussion and reflection of events and then transferring that learning into clinical practice which in turn improving patient care.

In addition, this study finding was compatible with *Maffucci et al.*, (2024) who studied "Evaluating a shared reflective practice to develop nursing student", and stated that the facilitators had a multifaceted and vital role in initiating and guiding the students' reflection process in the debriefing. The facilitator was also pivotal in the students' guidance in putting pieces together and seeing the wholeness in what was simulated. The students viewed the debriefing as a reflective process of acquiring new insight into their professional development.

The study finding was congruent with Saati, (2023) who conducted a study on: "Exploring the experiences and perceptions of Saudi nursing students with debriefing after simulation session and highlighting the perspectives of the nursing faculties regarding the students' experiences with simulation and viewpoints", and emphasized the importance of effective communication and coordination in achieving successful outcomes. Debriefing helps students to reflect on their learning and take charge of their education, leading to improved patient outcomes. Therefore, debriefing is considered an effective strategy for enhancing clinical proficiency and nursing education in Saudi Arabia. Debriefing is a planned discussion between instructors and students after a clinical simulation, designed to improve learning and encourage self-reflection.

However, these findings were in contrast with *Asregid al.*, (2023) who investigated : "The teacher educators use of feedback to facilitate reflective practice among pre-service teachers during microteaching", and revealed that the study deduced that teacher educators inadequately leveraged varied feedback methods to foster active reflective practices among pre-service teachers. This suggests a missed opportunity in utilizing feedback as an effective pedagogical tool to encourage reflective practice among pre-service teachers. Given the limitations regarding the generalizability of this study.

The present study findings clarified that the studied nursing students perceived higher mean score of self-efficacy regarding blood pressure measurement during post- test, followed by the phase of follow-up test as compared with the phase of pre-test. Moreover, there was a highly statistically significant difference among total mean score of self-efficacy regarding blood pressure measurement during pre, post & three months follow up among the studied nursing students.

From researcher' point of view, these results may be due to the positive effect of a training program on enhancing studied nursing student' knowledge and self-confidence which consequently improve their self-efficacy. Moreover, this finding was supported with *Kaynak and Ergün, (2024)* who conducted a study on: " The effect of video-based laboratory application on self-efficacy and self-learning in nursing students, At the beginning and end of the study, self-directed learning instrument (SDLI) and (general self-efficacy scale (GSES) were applied to the students", and found that the difference between the GSES and SDLI total and subscales pre and post-test difference mean scores were found to be higher for nursing students in the study group compared to those in the control group.

Meanwhile, this finding was supported with *Chao*, (2024) who conducted a study on: "Interprofessional differences in multidimensional self-efficacy associated with professional performance in nephrology during case-based learning ", and showed that learning SE was an important determinant of nephrology professional performance.

Likewise, these results were matched with *Yang et al.*, (2024) who conducted a study on: "Enhancing nurse practitioners' emergency care competency and self-efficacy through experiential learning", and found that experiential learning was able to significantly improve nurse practitioners' emergency care competencies and self-efficacy.

The present study findings demonstrated that the studied nursing students had higher mean score of clinical performance regarding blood pressure measurement during post- test, followed by the phase of follow-up test as compared with the phase of pre-test. Moreover, there was a highly statistically significant difference among total mean score of clinical performance regarding blood pressure measurement during pre, post & three months follow up among the studied nursing students.

From researcher' point of view, these results may be due to the training had a positive effect on students' knowledge, skills and attitude which leads to improve students' performance in the post-test and follow up-test.

These results were matched with *Ebraheim et al., (2023)* who studied: "Early warning score (EWS) education and its effect on nurses' performance regarding identification and response to clinical deterioration", and concluded

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that there was significant improvement of studied nurses' performance regarding identification and response to clinical deterioration due to positive effect of EWS educational program intervention. Also, satisfaction concerning EWS educational program was reported sufficiently among studied nurses after program intervention.

In addition, the result of the current study was supported by Helmy, (2023) who conducted a study on: " Effect of educational guidelines on nurses' performance regarding percutaneous nephrostomy tube", and concluded that the educational guidelines had positive effect on improving nurses' knowledge and practice regarding percutaneous nephrostomy tube and the educational guidelines had a noticeable positive effect on improving nurses' performance regarding percutaneous nephrostomy tube. There was a highly statistically significant positive correlation between the total knowledge scores and total practice scores of the nurses who participated in the study before and after receiving the educational guidelines regarding the percutaneous nephrostomy tube.

Moreover, these results were inconsistent by the study findings of *Gulati et al.*, (2021) who conducted a study on: "Assessment of blood pressure BP skills and belief in clinical readings", and demonstrated that accurate BP assessment continues to remain suboptimal in clinical practice, including by cardiologists and preventive cardiologists. The potential impact on our patients is difficult to estimate but given the importance of the diagnosis and treatment of hypertension on reducing cardiovascular disease and kidney disease, the importance of these simple skills cannot be overstated.

The current study results clarified Effect size and η^2 of reflective debriefing strategy on nursing students' self- efficacy during pre, post & three months follow up among the studied nursing students. It showed that implementing reflective debriefing strategy had positive large effect size on nursing students' self- efficacy during pre, post & three months follow up among the studied nursing students. Therefore, this provided enough evidence to support research hypothesis.

From the researcher's point of view, these findings can be attributed to several reasons. First of all, the nature of the RDS environment that they were none threatening, each student could reflect on their performance individually without embarrassment in front of the instructor. Additionally, the design of RDS was dependent on reflective questions about the BL.P procedure that enabled students to evoke their thought process to reflect on the performance. They had full opportunity to know their weaknesses and control them. So, they are satisfied that they managed it, which lead to improve student's selfefficacy.

These findings were matched with Penalo, (2023) who explored: " The effects of the virtual simulation prebriefing-debriefing educational strategy on nursing students' self- efficacy and virtual simulation performance", and suggested that a high-quality virtual simulation experience that integrates the healthcare simulation standards of best practice, including structured prebriefing and debriefing strategies, can positively influence students' self-efficacy perceptions and virtual simulation performance scores.

The result of this study was consistent with Kiernan et al., (2020) who conducted a study on:" Validating nursing students' self-efficacy rating and urinary catheterization skills using debriefing", and showed that debriefing was effective in improving student's self-efficacy in the performance of nursing skills including urinary catheter insertion. Moreover, these findings were matched with Lee and Kim et al., (2020): "who compared between three methods of reflective debriefing; instructor directed, selfdirected, and video assisted on self-efficacy, confidence in performance, self-assessed communication skills, and satisfaction", and revealed that the video assisted, self-directed debriefing group obtained the highest mean score difference for confidence in performance, selfassessed communication skills, and satisfaction with the debriefing method.

However, the current study finding was inconsistent with *Mills*, (2024) who explored: " The effect of debriefing after low- fidelity simulation on the self-efficacy and anxiety of athletics training students", and proved that there was a significant negative relationship between state anxiety and self-efficacy, a significant change in state anxiety before and after completing a low fidelity simulation LFS activity, and a significant impact of debriefing on the selfefficacy of athletic training students.

The current study clarified that implementing reflective debriefing strategy had positive large effect size on nursing students' clinical performance of blood pressure measurement during pre, post & three months follow up among the studied nursing students. Therefore, this provides enough evidence to support research hypothesis.

From researcher' point of view, these results may be due to the reflective debriefing strategy program had a positive effect on students' critical reflective thinking and promoting analytic skills may increase clinical judgment, which lead to improve the nursing competency required in clinical settings which showed a positive impact on nursing education. The debriefing stage offers an opportunity to improve the quality of education, simulate student's reflective thinking, self–evaluate/analyze their performance which have great power in enhancing performance.

Moreover, this finding was matched with Cambridge et al., (2023) who conducted a study on: " Entry to practice nursing students' experiences of debriefing during clinical practice", and reported that nursing student expressed the value of debriefing as an opportunity to share their experiences and feelings, and gain validation, reassurance and guidance. Students who engaged in debriefing found relief, confidence, and new ways of thinking through a shared understanding they were not alone in their feelings. Debriefing supported student learning through enhancing self-awareness, strengthening opportunities for students to explore, and reflect on, the impact of the patient care provided.

Likewise, this finding was in the same line with Mohammad, (2023) who conducted a study on : "Exploring the discourse of debriefing interactions", and reported that debriefing has been widely used as part of simulation- based education (SBE) to promote reflective thinking and prepare students for real clinical practice. This type of discourse to be effective, active participation, clear communication, and elaborates self-reflection are essential. Moreover, this study confirms that the presence of an expert during debriefing is vital. An expert ensures that a high quality of patient care is provided, validates students' clinical decision making, and optimizes students' performance by minimizing unnecessary errors. However, the dominance of the expert's presence should not override the students' presence in the debriefing interaction; that is to promote learners' abilities to effectively analyze their own performance and practice efficient self-debriefing.

On the other hand, these findings were contradicted with Colman et al., (2024) who conducted the study on: " A comparison of rapid cycle deliberate practice and traditional reflective debriefing on inter professional team performance", and revealed that our study did not demonstrate that either traditional reflective debriefing TRD versus rapid cycle deliberate practice RCDP was meaningfully better in teamwork knowledge acquisition or improving skill application and performance. As such, we propose reflective deliberate practice as a framework for future study to allow learners to reflect on learning and practice in action.

The current study results revealed that, there was a high statistically significant positive correlation between (clinical performance regarding blood pressure measurement & selfefficacy & reflective experience; self- efficacy & reflective experience) during pre, post & follow up among the studied nursing students.

These findings were in the same context as the study findings by *El-gebaly*, (2021) who conducted a study on : "The effectiveness of reflective debriefing strategy in nursing education", who reported that there was a highly statistically significant difference between the study and control groups concerning their selfefficacy in performing the procedure in favor of the study group.

This finding was supported with *Brennan*, (2022) who conducted a study on: "The impact of self-efficacy based prebriefing on nursing student clinical competency and self-efficacy in simulation", and investigated that a model for prebriefing based on self-efficacy for its effects on nursing student's self-efficacy and clinical competency in simulation. In addition to standard prebriefing, the model included activities such as role-modeling, reflection, hands-on orientation, time to plan care, and time to ask questions. It was shown that nursing students who received prebriefing per the self-efficacy SEPM had statistically significantly higher self-efficacy and

clinical competency in simulation.

This finding was supported with *Incesu et al.*, (2024) who conducted a study on : "The effect of verbal feedback given by the educator on nursing students' perceived stress, academic and clinical self-efficacy levels", and revealed that self-efficacy is a significant predictor of performance success. Explanations for this contradiction likely center around how self-efficacy was operationalized and rigor of the included studies.

Conclusion

More than four-fifths of the studied nursing students gained a high level of debriefing experience during the post-test phase, Meanwhile as compared with pre-test, the majority of the studied nursing students gained a high level of self-efficacy regarding blood pressure measurement during the post-test phase as compared with pre-test, Moreover, more than four-fifths of the studied nursing students gained a high level of clinical performance regarding blood pressure measurement during the post-test phase followed by the phase of follow up phase as a compared with the phase of the pre-test followed by follow up phase.

Recommendations

The main recommendations are:

In the light of the findings obtained from the present study, the following recommendations are suggested:

- A- Recommendations related to practical level
- Disseminate the study results to the key educators to address application of RDS strategy on nursing students as a teaching method.
- Training program need to be conducted for all nursing students to be more skillful about the RDS application in their studying and then their career after graduation.
- Provide educational workshop to all nursing students to enhance their performance and consequently patient's outcomes.

B- Recommendations related to nursing education

- Reflective Debriefing strategy would be used in combination with traditional clinical teaching methods.
- Encourage collage library to enrich the library with books related to new topics in RDS strategy application.
- Provide opportunities to attend nursing conferences that are organized for all nursing students about Reflective Debriefing strategy and how to apply it in their studying which can positively impact their self- efficacy and clinical performance of their nursing practice.

C-Recommendations for further studies

- Further study need to be conducted on the role of RDS strategy in enhancing taught those new ways of thinking and learning to be able to analyze their performance.
- Further study to examine the effectiveness of RDS strategy on nursing student's self-efficacy and clinical performance competency of educators.
- Finally, Further study need to be conducted on a large sample in different colleges in order to generalize the results of the study.

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