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Effectiveness of a Person-Centered Care Training Program on Self-Reflection Among Critical Care Nurses at KSAMCs in Madinah, Saudi Arabia: A Quasi-Experimental Study

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Abstract

Patient-centered care is now the accepted model for providing healthcare, with an emphasis on tailoring care to respect each patient's values and preferences and needs. One essential competency is reflective practice, where nurses can assess their clinical behavior, enriching decision-making while seeking to improve the quality of care provided to patients. Objective: To examine the impact of a person-centered care educational intervention on critical care nurses' reflective practice in the KSAMCs, Madinah, Saudi Arabia. A pretest–posttest control group design quasi-experimental study was conducted. A total of 234 critical care nurses were included in the study, consisting of 176 nurses from the intervention and 58 from the control group. The intervention group underwent a structured person-centered care training program, while the control group did not receive any training throughout the duration of the study. Self-reflection was assessed with a questionnaire of eight items delivered pre- and post-intervention. Reliability analysis, descriptive statistics and paired-samples t-test as well as independent-samples t-tests were applied in the data analyses. The results indicated that those who took part in the training had better self-reflection skills. After training, self-reflection significantly increased within the intervention group ($P<0.05$), and compared with the control group, post-intervention scores of self-reflection were also significantly different ($P<0.001$). Higher scores in post-test reflected results of person-centered care training program having a significant positive impact on nurses' reflective practice. Integrating education on person-centered care into nursing curricula is an important step towards nurturing reflective practice and bettering the quality of critically ill patients' experiences.

Key Words: Person-Centered Care, Self-Reflection, Critical Care Nursing, Reflective Practice, Nursing Education.

1. Introduction

Around the world, health care systems are placing a growing emphasis on delivering care that acknowledges patients as individuals with particular needs, preferences and values. In this background, person-centered care also became an important principle of modern nursing practice. Person-centered care emphasizes the need to respect patients' experiences, support decision-making through collaboration, and have healthcare delivery align with the

personal values and expectations of patients and families. Based on the person-centered nursing framework, we know that meaningful involvement involves a relationship between healthcare professionals and patients with nurses at the heart of this involving therapeutic relationships and individual care planning (McCormack & McCance, 2021). The incorporation of person-centered approaches within healthcare systems throughout the world has been shown to be correlated with increased patient satisfaction, quality of care, and clinical outcomes (Lewandowski et al., 2021). Person-centered care practices are particularly salient in high-intensity settings like critical care units because patients present with complex clinical conditions and decisions must be made quickly but also compassionately.

These environments are fast paced with high-acuity patients, complex technology, and time-sensitive treatments. These conditions make it difficult for nurses to implement reflective and patient-centered approaches to care consistently. It is thus identified that reflective practice becomes the vital competency leading nurses to review their clinical experiences, advance professional judgment on holistic patient care and contribute toward high-quality patient management. Reflective Practice is the systematic consideration of an experience to contribute to learning and professional development. Education: Reflective practice involves the process of adding theory to clinical experience, further solidifying their ability as a nurse to provide safe and compassionate care (Patel & Metersky, 2022). Reflection allows nurses to apply their learning toward a deeper understanding of how they interact with patients, interrogation of their decisions and thought processes, and recognition of opportunities for care delivery improvements.

Educational interventions have been acknowledged as effective approaches for fostering reflective competencies in professionals working in the health care system. Training programs with reflective learning methods, such as simulation, reflective writing, and experiential activity-based learning have been found to positively influence nurses' clinical reasoning and professional development. For instance, Aitken et al. (2021) demonstrated that simulation-based training facilitates reflective practice by providing nurses with an opportunity to evaluate their clinical responses and self-determine areas for improvement in a protected learning environment. In a similar context, reflective practice training is linked to critical thinking and communication as well as clinical decision-making improvements in nurses and nursing students (Chen et al., 2025). These findings indicate that structured educational interventions can be a significant contribution to foster reflective competences what supports high general quality of nursing practice.

In the context of person-centered care, reflective practice is especially significant as it challenges nurses to critically reflect on how their conduct, responses to and clinical decisions can shape patient experiences. Reflective learning provides understanding in the mind of patients and families, which is an empathy history that fosters personalized care. Research suggests that reflective practice leads to the development of professional self-awareness while also increasing nurses' abilities to provide compassionate, patient-centered care (Aldhaferi et al., 2024). Moreover, fostering learning through reflection within continued professional development takes place to assure lifelong learning and the sustained enhancement of nursing skills (Mlambo et al., 2021). When educational interventions are designed based on evidence-based educational approaches using appropriate teaching methods, it is reported that such an intervention improves knowledge, attitude and clinical practice among nurses (Menekli et al., 2021). To the best of our knowledge, empirical evidence to assess the effectiveness of person-centered care training programs on reflective competencies among critical care nurses is limited, especially in Middle Eastern healthcare settings.

Hospitals in Saudi Arabia have placed greater emphasis on quality and patient safety as part of a larger healthcare transformation. This goal is achieved in part due to the role of the critical care nurse whose fundamental task in caring for critically ill patients is to provide complex and continuous care. Therefore, promoting reflective practice among nurses may help boost professional performance and enhance patient-centered care delivery. This will be an important factor for developing nursing training programs in hospital as it provides understanding about how targeted educational interventions would affect reflective competencies. Accordingly, the current study aims to assess the effect of a person-centered care training program on self-reflection among critical care nurses in King Salman Armed Forces Medical City (KSAMCs) at Madinah, Saudi Arabia. The study aims to provide empirical evidence for the role of person-centered care education in reflective nursing practice by investigating the differences between nurses' self-reflection before and after receiving the training intervention.

2. Literature Review

2.1 Theoretical Discussion

person-centered care has emerged as a powerful idea that bubbles into contemporary notions of health and healthcare systems providing process measures for persons to receive care in ways that align with their own individual values, priorities, preferences and life experiences. At the core of nursing practice, person-centered care emphasizes the development of mutual caring processes between nurses and patients to create common shared decisions so that health-related interventions are tailored according to patient needs and expectations. The person-

centered framework is underpinned by theory, specifying how different elements of nursing practice nursing environments, professional competencies and interpersonal interactions combine to provide holistic, individualized care. Within this framework, it is essential for nurses not just to have clinical knowledge and technical skills but also reflective abilities that enable them to assess the implications of their actions in their interactions with patients (McCormack & McCance 2021). Such reflective capacities are crucial for maintaining care appropriately responsive to the changing conditions and personal situations of patients.

The importance of reflective practice reflects one of the key theoretical foundations underpinning person-centered nursing care. Systematic reflection on professional experiences to facilitate learning, optimize clinical judgement and foster professional development is known as reflective practice. For nursing, reflective practice allows practitioners to analyze their clinical actions, recognize areas for advancement and link theory with the real-world application. Reflective practice promotes self-awareness and professional accountability, key attributes for delivering quality of care to patients (Patel & Metersky, 2022). Reflective thinking allows nurses to comprehend the impact of their actions while enhancing future clinical performance.

Reflective practice in nursing is theoretically grounded in the experiential learning theories. Teachers learn professionally through iterative cycles of experience, reflection, conceptualizing, and experimentation according to reflective learning models. Reflective learning strategies within healthcare education aim to facilitate practitioners' reflections on their clinical experiences which will inform future practice. Confounding this perception are experimental observation and analysis of educational approaches involving reflective components ranging from reflective writing to case analysis, experiential learning activities and the like that have been found to amplify critical thinking, empathy, and communication ability in nurses (Chen et al., 2025). These competencies are critical in clinical settings where patients require integrated care to meet their complex needs.

Training interventions are significant in the development of reflective competencies that should be endowed to nurses. However, many programs aimed at fostering reflective practice include direct experience (e.g. simulation-based learning), reflection on experience (via formal publication of a reflective journal) and discourse regarding the experience with peers. Pull Quote Simulation-based training offers nurses a controlled teaching environment where they analyze their own clinical decisions and behaviors, which can largely facilitate reflective learning processes (Aitken et al., 2021). Likewise, reflective practice training programs have been found to enhance nurses' critical thinking skills and communication capabilities, which in turn fortify their ability to deliver patient-centered care (Khalil & Abou Hashish, 2022). Conclusion: These findings emphasise the need for structured educational interventions tailored to enhancing reflective learning in clinical practice.

There is a strong linkage between reflective practice and professional development and lifelong learning in nursing. Professional Continuing Education allows nurses to remain current with knowledge, develop competency in the clinical setting and adjust to new health care environments. According to research, reflective learning promotes continuous professional development and this is achieved by equipoising practice on experiences by the nurses leading them to adopt contemporary concepts (Mlambo et al., 2021). Thus, reflective practice provides a mechanism for individual and organizational learning within healthcare settings. Particularly in critical care settings, the role of person-centered care and reflective practice becomes even more significant. Intensive care units are complex clinical environments where nurses must practice rapid decision-making and maintain individualized, patient-centered, compassionate care. Research on nursing praxis in intensive care has highlighted how providing person-centered care needs not just high level of professional awareness and ability to empathize and reflect upon the patient experience (Youn et al., 2022). Reflective practice helps nurses understand the needs of patients and modify their care approach accordingly. Hence, the quality of person-oriented manner in which critical care nurses provide care may be enhanced through training programs on reflective skills.

2.2 Hypotheses Development

2.2.1 Person-Centered Care Training and Self-Reflection Improvement

The use of reflective practice in nursing is considered a corner stone of professional development. Nurses, through reflection on clinical practice critically examine their experiences from an educational perspective to ensure that there is a constant state of questioning decision-making processes as well as the provision and delivery systems put in place for optimal patient care. For the purpose of bridging the gap between conceptual knowledge and real-life clinical practice, reflective approach facilitates integration that enhances both clinical reasoning as well as professional competency in nurses (Patel & Metersky, 2022). Reflective learning allows nurses to learn about the impact of their actions on patient outcomes and professional relationships in complex healthcare contexts. Reflection in the context of professional development is important for nurses' reflective abilities, and this has been shown to improve with educational interventions that include reflective learning strategies. Simulation exercises, reflective writing and experiential learning activities allows nurses to explore their practice and learn from their experiences. In particular, simulation-based training allows the nursing professionals to review their clinical responses in a systematic manner and where they need to improve (Aitken et al., 2021). 20 Reflective educational strategies promote critical thinking, communication skills and empathy in the nursing personnel (Chen et al., 2025).

Education programs on person-centered care often include reflective learning approaches to prompt nurses to consider patients' perspectives and tailor their care accordingly. The training contributes to a better awareness of individual patient needs while reinforcing on developing professional self-awareness among nurses. According to a recent study reflective learning interventions can markedly improve healthcare professionals clinical reasoning and patient-centered attitudes (Lim et al., 2023). Reflective training enables nurses to consider how their interactions with patients can lead to greater empathy, and emphasizes personalized treatment plans. Since reflective practice is fundamental for and within nursing education as well as professional development, it was anticipated that an intensive person-centered care training program could support nurses to develop self-reflection capabilities. This suggests that nurses who receive such training may engage in deeper reflection about their clinical actions and patient interactions, leading to evidence of measurable improvements in reflective practice.

H1: Critical care nurses who receive the person-centered care training program demonstrate significantly higher self-reflection scores after the intervention compared with their pre-intervention scores.

2.2.2 Differences in Self-Reflection Between Intervention and Control Groups

Training programs aimed at improving professional competencies often result in measurable cues that distinguish between individuals who took part in the intervention, and those who did not. Educational Interventions Reflective learning strategies are particularly effective at promoting self-awareness and active learning and contribute to continuous professional development. It includes the ability of nurses to review and learn from their clinical experiences, which is essential for developing effective professional decision-making processes (Patel & Metersky, 2022). Healthcare simulation and experiential learning approaches are by nature reflective. Such approaches enable nurses to reflect on their clinical decisions, allowing them to explore the efficacy of the actions they take. Considered the cornerstone of simulation-based education, these programs are designed to allow nurses practice in a safe environment, integrating previous knowledge while applying clinical reasoning skills and bridging the gap between theory and practice (Aitken et al., 2021), which have also been shown to increase reflective practice as well above Without structured reflection, nurses gain insight into their own professional behaviors and become more adept at delivering patient-centered care.

Training programs with a focus on person-centered care also contribute to reinforcing such reflective competencies in the health workforce. These programs promote very thoughtful professional awareness and better patient engagement by focusing on patients' individual needs and inspiring reflective assessment of clinical encounters. It has been shown that healthcare practices can be improved through person-centered care models training professionals how to treat patients as more than just their illness leading to an increased level of satisfaction in healthcare quality delivered (Lim et al, 2023). By prompting nurses to examine their own clinical actions and enhance patient interactions, reflective practice interventions have proven equally beneficial in improving healthcare quality (Saban et al., 2021). Due to the nature of reflective learning interventions, which require nurses to actively analyze their professional experiences, nurses who participate in this type of training should have a greater level of reflective practice than those who did not receive such an intervention. Thus, nurses participating in a person-centered care training program would obtain a higher score of self-reflection than that of the control group (not received the training).

H2: Critical care nurses who receive the person-centered care training program demonstrate significantly higher post-intervention self-reflection scores compared with nurses in the control group.

3. Methodology

In this study, a quantitative quasi-experimental research design with pretest–posttest control group approach was applied to examine the effect of person-centered care training program on self-reflection in critical care nurses. Quasi-experimental designs are often utilized in education intervention research within the healthcare and nursing fields to evaluate intervention effectiveness when randomization cannot be performed in actual clinical settings. This enables researchers to make comparisons of results prior to and following an intervention, as well as differences between the trained and non-trained groups (intervention vs control), rendering solid evidence about training successes in real life clinical settings (Martos-Cabrera et al., 2021). The quasi-experimental design in the present study allowed for the measurement of nurses' self-reflection levels before and after participation in the training program.

This study was conducted at a large tertiary healthcare institute, King Salman Armed Forces Medical City (KSAMCs), in Madinah, Saudi Arabia, which provides specialized medical care such as critical care. The eligible population was nurses working in the hospital's critical care units. Critical care nurses were chosen as a participant group due to their work in complex clinical settings where reflective practice and the provision of person-centered care are critical to providing high-quality, individualized patient care. Studies noted that reflective competencies are particularly crucial in intensive care units as the complexity of clinical decision-making and the need for personalized patient care outstrips routine or procedural thinking (Youn et al., 2022). 234 nurses were included in the study. Participants were allocated to one of two arms: an intervention arm that received the person-centered

care training program or a control arm that did not receive the intervention throughout the study period. A total of 238 nurses in the sample, including 176 in the intervention group and 58 in the control group. Comparing the two groups, they could assess the impact of the training program on self-reflective outcomes.

The intervention was a structured person-centered care training program aimed at increasing nurses' understanding of informing a patient-centered way of working and reflective learning. Developmental efforts to promote reflective practice usually involve experiential learning, reflective discussion, and scenario-based training. These practices motivate staff nurses to reflect on their clinical encounters in order to develop better professional judgment (Aitken et al., 2021). Moreover, these educational programs on person-centered care aim to enhance health professionals' knowledge of patients' needs, values and preferences regarding their treatment healing processes (McCormack & McCance, 2021), promoting further individualized and compassionate care for them. Educational sessions focused on core principles of person-centered care, learning in practice and interacting with patients. The respondents in the study group had received the training program prior to post-intervention assessment.

A structured questionnaire was used to collect data and measure nurses' self-reflection. The instrument included eight items that measured participants' reflection in relation to professional practice and clinical experiences. Self-reflection is an integral part of nursing professionalism and helps practitioners to reflect on the clinical decisions made over time and improve future performance (Patel & Metersky, 2022). There are reflective practice measurement instruments that measure nurses' level of use of reflective thinking in clinical practice environments (Shin et al., 2022). Participants rated their level of agreement on statements related to reflective practice for each item using a Likert-type scale.

The questionnaire was conducted prior to the training intervention (pretest) and at its completion (posttest) to determine variations in levels of self-reflection. Data were collected in two phases. Data were collected through the pretest questionnaire from both intervention and control groups in first phase. We conducted a posttest questionnaire after the intervention group closed out the person-centered care training program to assess change in self-reflection. The control group filled out the questionnaire at the same period of time without receiving training intervention. This approach enabled both pre- vs post-intervention comparisons in the intervention group, as well as comparisons between the intervention and control groups.

Data were analyzed with the Statistical Package for the Social Sciences (SPSS). The research hypotheses were tested using several statistical methods. Cronbach's alpha correlation coefficient was performed for the reliability analysis of self-reflection scale. Characteristics of data were summarized in terms of descriptive statistics. Additionally, normality tests were conducted for variables distributions. In order to evaluate the training intervention, a paired-samples t-test was conducted comparing pretest and posttest self-reflection scores in the intervention group. Furthermore, to compare post-intervention scores between the intervention group and control groups, an independent-samples t-test was also performed. These statistical methods are commonly used in nursing education research to evaluate the effectiveness of educational interventions and to determine whether training programs significantly influence professional competencies (Menekli et al., 2021). Effect sizes were also calculated to assess the magnitude of the observed differences.

4. Findings

This section presents the statistical results of the study examining the effectiveness of the person-centered care training program on self-reflection among critical care nurses. The analysis starts by evaluating the reliability of self-reflection measurement scale, then data normality. We provide descriptive statistics to describe the baseline levels of self-reflection in participants. Then, inferential statistical tests are performed to test the research hypotheses. A paired-samples t-test investigates differences in self-reflection scores before and after the training intervention within the intervention group, and an independent-samples t-test examines post-intervention self-reflection scores between groups (intervention vs. control). The results of these analyses offer empirical support about the effectiveness of the person-centered care training program on nurses' reflectivity, seen as an important competence in enhancing nursing quality and patient-centeredness.

To evaluate the internal consistency of the self-reflection scale developed for this study, reliability analysis was performed. Cronbach's alpha was used to verify that the items contained in the scale reliably measure items of a single underlying construct. Cronbach's alpha is a widely used statistic in nursing and healthcare research for determining the reliability of survey instruments, specifically to ensure that measurement items are adequately inter-related. In Table 1, the reliability coefficient was 0.747 for pre-intervention self-reflection scale (Pre_SR) and 0.726 for post-intervention self-reflection scale (Post_SR). Both values are above the accepted cut-off of 0.70, suggesting that there is acceptable internal consistency in using eight items to measure self-reflection. These findings confirm the reliability of the self-reflection instrument used in this study to evaluate nurses' reflection on practice before and after training intervention. Building the reliability of measurement instruments is key in nursing

research, as reflective practice is a multifaceted domain, which should be measured consistently and accurately across several items.

Table 1: Reliability Test

Construct	Items	Cronbach's Alpha
Pre_SR (Self-Reflection)	8	0.747
Post_SR (Self-Reflection)	8	0.726

To assess if the distribution of self-reflection scores met the assumptions for parametric statistical analysis Skewness and kurtosis statistics were calculated to assess the distributional properties of each variable. Normality is thus an important step in quantitative research as it allows to ensure that the statistical tests applied are appropriate for the dataset. The skewness value of Pre_SR and Post_SR presented in Table 2 was −0.052 and −0.713, respectively. The kurtosis values obtained were −0.412 for Pre_SR and 0.996 for Post_SR. All of these values are within acceptable range for normal distribution, meaning that data are approximately normally distributed. More specifically, the results indicate that this distribution is not significantly different from normal. Thus, parametric statistical techniques like t-tests can be used in subsequent analyses. Normality of data distribution is essential in nursing research as it provides validity when determining intervention effects through statistical inferences.

Table 2: Normality Test Results for SR and PSC Scores pre and post intervention

Items	N	Skewness	Kurtosis
Pre_SR	234	-0.052	-0.412
Post_SR	234	-0.713	0.996

Pre_SR: (Self-Reflection); Post_SR: (Self-Reflection).

Kolmogorov–Smirnov and Shapiro–Wilk normality tests were performed to confirm the distribution of self-reflection data. Statistical tests like these are often applied for assessing if a data set substantially differs from normality. Normality tests are important, particularly in intervention-based nursing studies, and should be done prior to parametric statistical analysis. According to the results of Kolmogorov–Smirnov test presented in Table 3, significance values were p = 0.000 for Pre_SR and Post_SR scores. Likewise, the Shapiro–Wilk test read p = 0.008 for Pre_SR and p = 0.000 for the Post_SR values These results indicate statistically significant departures from perfect normality. However, normality tests (e.g. Kolmogorov–Smirnov and Shapiro–Wilk tests) appear to be extremely sensitive for larger samples such as the present study (N = 234), leading them to reject the null hypothesis of normality even in instances where departure from this assumption is minimal. Thus, the skewness and kurtosis values presented earlier are more practical for determining the characteristics of a distribution. Those values are within reasonable limits, so the data could consider to be approximately normal. Therefore, parametric statistical analyses including paired-samples and independent-samples t-tests were deemed suitable to test the research hypotheses. Literature Review Statistical Assumptions Statisticians emphasize the importance of appropriate statistical assumptions to derive valid conclusions from data analysis in nursing and healthcare research.

Table 3: Kolmogorov-Smirnov Test

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Pre_SR	0.091	234	0.000	0.984	234	0.008
Post_SR	0.103	234	0.000	0.957	234	0.000

a. Lilliefors Significance Correction

Pre_SR: (Self-Reflection); Post_SR: (Self-Reflection).

In order to summarize baseline self-reflection level among participating nurses before intervention, descriptive statistics were performed. This simple descriptive analysis assesses the mean and variability of a variable with an overview of the data before applying an inferential statistical test. The total number of study participants included in the analysis was 234 nurses as shown in Table 4. The average score for self-reflection before the intervention (Pre_SR) was 3.551, with a standard deviation of 0.405. The means show that, on average, participants reported a moderate level of self-reflection before the training program. The low standard deviation also suggests that participants' responses were widely distributed around the mean, which indicates reasonable consistency among nurses in their baseline self-reflection levels. Reflective Practice: Importance As self-refection aids in clinical learning, professional insight and decision-making in nursing practice, thus understanding reflective practice at baseline is crucial.

Table 4: Summary of Descriptive Analysis

Items	N	Mean	Std. Deviation
Pre_SR	234	3.551	0.405

Pre_SR: (Self-Reflection).

A paired-samples t-test was conducted to examine whether self-reflection among nurses in the intervention group significantly improved after receiving the person-centered care training program. To shed more light on the relationships identified in this qualitative analysis, mean self-reflection scores pre- and post-training intervention can be compared to assess if any measurable changes occurred as a result of the educational program. The mean self-reflection score was 28.380 (SD = 3.290) before intervention, and increased to 31.940 (SD = 2.280) after intervention, as shown in table 5. The mean difference was 3.560 between pre- and post-intervention scores; Paired-samples t-test comparing the scores from two time points indicated a statistically significant difference between the two measurements ($t = -11.510$, $df = 175$, $p < .001$). Apart from reported statistical significance, Cohen's d was used to calculate a measure of the size of intervention effect. The suggested effect size was 0.87 demonstrating a large training program impact on nurses' self-reflection levels. This finding indicates that participation in the person-centered care training program led to significant improvements of nurses' reflective practice. These results confirm the first research hypothesis and illustrate a significant mean difference in post-test self-reflection scores among participating nurses compared to pre-intervention. Similarly, reflective learning interventions enhance nurses' capacity of critically appraising their clinical experiences with a view to improve their practice.

Table 5: Paired-Samples t-Test Comparing Pre- and Post-Intervention Self-Reflection Scores (Intervention Group, N = 176)

Measure	Mean (Pre)	Mean (Post)	Mean Difference	t	df	p-value	Cohen's d
Self-Reflection	28.380 (3.290)	31.940 (2.280)	3.560	−11.510	175	< .001	0.870

To examine differences in post-intervention self-reflection scores between the intervention group and control group, an independent-samples t-test was conducted. This analysis enables the comparison of two independent group mean scores to assess whether the training program made a significant difference compared with nurses who received no intervention. As reflected in Table 6, the intervention group (N = 176) had a mean self-reflection score of M = 31.940 (SD = 2.280), compared to control group scores of M = 28.55 (SD = 3.570; N=58). An independent-samples t-test revealed a statistically significant difference between the two conditions ($t = 6.780$, $df = 72.820$, $p < .001$). The self-reflection score between the two groups differed with a mean difference of 3.39, meaning nurses who attended the person-centered care training had higher levels of self-reflection than their non-attending counterparts. The analysis produced an effect size (Cohen's d = 1.28), indicating a very large effect size, which signifies a significant impact of the training program on promoting reflection into practice for nurses. These findings confirm the second research hypothesis which suggests that self-reflection scores after the intervention were significantly larger in nurses of the experimental group as compared to nurses of control group. Targeted educational interventions aimed at improving reflective practice have been shown to increase nurses' professional awareness and clinical decision-making skills.

Table 6: Independent-Samples t-Test Comparing Post-Intervention Self-Reflection Scores Between Treatment and Control Groups

Group	N	Mean	SD	t	df	p-value	Mean Difference	Cohen's d
Treatment (Intervention)	176	31.940	2.280					
Control Group	58	28.550	3.570	6.780	72.820	< .001	3.390	1.280

The overall results are summarized in Table 7, which presents the outcomes of hypothesis testing involving nurses' self-reflection measurements. The table shows the problem tested, the statistical methods applied, major contrasts made between groups analyzed (research overall), significance threshold (p), effect size values and if any significant improvements were noted. The paired-samples t-test was conducted on Hypothesis 1 (H1), to determine the differences in self-reflection scores in nurses within the intervention group, before and after training program. The results revealed that the intervention led to a statistically significant increase in self-reflection ($p <. 001$), with a large effect ($d = 0.870$). This finding showed the significant improvement in reflective practice of nurses which could be attributed to participation in the person-centered care training program. For Hypothesis 2 (H2), an independent-samples t-test was conducted to compare post-intervention self-reflection scores for participants in the intervention group and participants in the control group. Results demonstrated a statistically significant difference between the two groups ($p <. 001$) with a very large effect size ($d = 1.280$). The nurses in the training program reported significantly greater self-reflection when compared to the control group. In summary, the results suggest that person-centered care training has a crucial and purposeful effect on development of nurses' self-reflection. Reflective practice is also indispensable to developing professional awareness and increase quality of nursing care since it compels nurses to critically evaluate their clinical experiences and constantly improve their activity.

Table 7: Summary of Significant Improvements After Person-Centered Care Training

Outcome Variable	Hypothesis	Statistical Test	Key Comparison	p-value	Effect Size	Significant Improvement?
Self-Reflection (SR)	H1	Paired-samples t-test	Pre vs Post (Intervention)	p < .001	d = 0.870 (Large)	Yes
Post Self-Reflection	H2	Independent t-test (Welch)	Intervention vs Control	p < .001	d = 1.280 (Very Large)	Yes

5. Discussion

The current study aimed to assess the impact of a person-centered care training program on self-reflective practice among critical care nurses working for King Salman Armed Forces Medical City (KSAMCs), Madinah, Saudi Arabia. The results also show a significant improvement in nurses' reflective practice following the set intervention. Both the intra-group and inter-group comparisons showed that nurses who participated in the training program significantly improved their self-reflection skills compared to pre-test levels. Overall, these findings highlight the important contribution of structured educational interventions centered on person-centered practice in fostering reflective capacities for nursing professionals. More specifically, this first hypothesis assessed whether the critical care nurses in the person-centered care training program would show an increase of self-reflection scores at post-test compared to pre-intervention scores. Findings confirmed the hypothesis; there was a statistically significant increase in self-reflection levels of nurses in the intervention group. Though this finding bolsters the claim that reflective practice may be advanced using purposively focused teaching techniques. The reflective learning initiative helps nurses critically reflect on their clinical experiences to evaluate how the consequences of action may affect patient care. Past research has noted that reflective practice allows clinicians [to] also be able to apply theory into practice, improving clinical decision-making and professional growth (Patel & Metersky, 2022). The considerably greater improvement shown in the present study indicates that the training program encouraged reflective thinking among participants.

The findings are also in line with previous studies that stress the effectiveness of reflective learning strategies on educational outcomes among nursing students. Experiential learning approaches and simulation-based education have been shown to enhance reflective practice where nurses can evaluate their clinical actions and assess areas for improvement. Simulation-based training environments, for example, facilitate healthcare professionals' real-time events review that allows them to attain a better understanding of their professional behaviors (Aitken et al., 2021). These pedagogical methodologies allow nurses to assess themselves critically, thus promoting lifelong reflective skills needed in clinical practice. Reported in addition to the improvement within each group, which was also analyzed as a difference between nurses that received training and those who didn't receive the intervention. Hypothesis 2 was supported indicating that nurses that received the intervention had much higher levels of post-intervention self-reflection compared with control group nurses. This outcome reveals attributable improvements in reflective practice resulting specifically from training rather than variation between ongoing professional development. Nurses' professional competencies and reflective ability could be improved through educational interventions as the one outlined in this study. Reflective practice training help nurses to analyze their clinical experiences and increase awareness of the nature of their decision-making, and interactions with patients (Khalil & Abou Hashish, 2022).

Person-centered care related training programs seem to benefit the integration of reflective practices, as this has been shown to positively affect performance. In providing person-centered care, there is an emphasis on understanding the patient's perspective and mindful attention to a variety of needs and preferences that differ from one unique individual to another. Reflective learning also allows nurses to understand how their communication, attitudes, and clinical decision-making have an impact on patients. Research has indicated that reflective practice among healthcare professionals leads to increased willingness and adoption of patient-centered practice, as well as improved empathy toward patients (Aldhaferi et al., 2024). Thus, enhancing reflective capabilities with educational interventions has the potential to optimize both nursing care quality and patients' satisfaction. This study's results are in accordance with some studies highlighting the call for continuing education for nursing. It helps bring about professional competence while also allowing professional development to foster continuous learning and continuing education, thus the work practice of practicing medicine enhances over time. One such lily is reflective learning strategies to nurse. Nurses therefore benefit from training programs that include elements of reflection at work, as it proactively contributes to the improvement in their professional practice and emphasize their expertise in providing a high standard of patient-centered care.

Another key implication of the study relates to the critical care context in which the intervention was delivered. Intensive care units are defined by complexity of clinical conditions, severity of patients' state and urgent meaning-making processes. In such environments, nurses cannot only have strong technical competencies but also the capability to reflect on their clinical actions and adjust accordingly in care delivery process. Practice reflection allows nurses to understand the needs of reliable patient response and evaluate their clinical practice's efficacy in delivering care quality at work (Youn et al., 2022). The considerable gains in this study suggest how valuable person-centered care training interventions can be as a mechanism for developing critical care nurses' reflective practice skills. In general, the results give compelling evidence that training programs related to person-centered care can substantially foster self-reflection in nursing professionals. Employing strategies that focus on reflective learning in the context of education will foster and strengthen reflective practitioners who are able to offer compassionate, person-centered and high-quality care for those they serve across healthcare systems. The long-term implementation of reflective journals can contribute to improve the quality and effectiveness of professional training amongst nurses within the continuing education organizations, thus enhancing clinical performance in critical situations.

6. Conclusion

This study evaluated the effectiveness of a person-centered care training program in improving self-reflection among critical care nurses at King Salman Armed Forces Medical City in Madinah, Saudi Arabia. The results showed a significant improvement of nurses reflective practice after undergoing training program. After the completion of training, nurses who attended the intervention demonstrated a marked improvement in self-reflection when compared to nurses in the control group, with post-intervention scores significantly higher. These findings suggest that structured educational interventions concentrating on person-centered care can play an effective role in reinforcing reflective competencies according to nursing professionals. Evidence generated from individual reflectors should establish a practice best suited to nursing in acute environments that draw on clinical decision-making under emotional demands and provide compassionate care for complex patient needs. Reflective practice provides nurses with this opportunity to critically assess their experiences, their clinical judgment and ultimately improve the care provided to patients. The findings of this study indicate that person-centered care training programs also enhance reflective thinking, which may facilitate professional growth and improved patient-centered practice.

The study also highlights the importance of integrating reflective learning strategies into continuing professional development programs for nurses. Educational initiatives that encourage nurses to examine their clinical experiences and patient interactions can foster greater professional awareness and improve nursing performance. Healthcare organizations can enable more compassionate, responsive and individualized care through strengthening a reflective practice. Conclusions: This study adds valuable evidence on the contribution of person-centered care education towards enhanced reflective practice in nurses. Indeed, quality training programs like this can be implemented for healthcare institutions to enhance the standard of nursing practice as well as patient care outcomes. Future studies most likely would investigate the impact of reflective training programs as well in a long-term manner and how such interventions can affect various aspects of nursing performance along with patient safety.

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