

Effect of Nurses' Empowerment Training Program on Patients' Safety Culture: A Quasi-Experimental Pretest-Posttest Design

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Abstract:

Background: Empowerment in nursing Leaders may aid in developing strategies to foster an open, honest, and responsive culture of patient safety, eliminating silos, departmental rivalries, and professional territoriality within healthcare systems. **Aim:** to evaluate the effect of nurses' empowerment training program on patients' safety culture, at King Khalid General Hospital, Hafar Albatin, Saudi Arabia. **Method:** A quasi-experimental pretest-posttest design was utilized across all departments at King Khalid General Hospital, Hafar Albatin, Saudi Arabia, involving 115 staff nurses. Three tools were utilized to gather data relevant to the study. namely the Empowerment Knowledge Questionnaire, Conditions of Work Effectiveness Questionnaire, and the Hospital Survey about Patient Safety Culture. **Results:** The highest mean knowledge score post implementation of training program, with mean 25.50 ± 4.68 , the level of empowerment was improved from (20.9%) had high level pretest and improved to (49.6%) of Shortly following the program and (71.3%) following up, with the utmost level of patient safety culture mean score for post implementation of training program for (41.7%), with mean 92.03 ± 34.04 improved from pretest to 104.35 ± 23.61 to posttest. **Conclusion:** It was determined that an empowerment training program considerably enhanced staff nurses' empowerment knowledge, perceived empowerment, and the patient safety culture, and showed a significant pre-post difference, supporting the role of empowerment-based training in strengthening and maintaining a positive safety culture. **Recommendations:** Participate actively in empowerment training and apply learned skills (assertive communication, advocacy, shared decision making) during daily care.

Keywords: Nurses' Empowerment, Patients' Safety Culture.

Introduction

Nursing is seen as an expanding profession globally; nonetheless, nurses in poor countries encounter obstacles to their empowerment both within and beyond their profession. Empowerment is an intrinsic strength and capability that surpasses anticipated behaviours. The capacity of nurses to inspire and galvanize themselves and others to get favorable results in their work. Creating empowering workplace conditions is essential for recognizing and enhancing nurses' autonomy and agency, ultimately leading to improved work outcomes (Dirik, & Seren Intepeler, 2024).

Empowerment is an intrinsic strength and capability that surpasses anticipated behaviours, stemming from the significance and value individuals attribute to their work. Empowerment refers to the positive notion of granting authority or power to undertake specific actions. This is a dynamic idea that can be shared, received, or bestowed upon others. (Ibrahim, et al., 2024).

Empowered health professionals may experience less emotional exhaustion.. A positive association was also observed between job empowerment and individual achievement. (Dirik, & Seren Intepeler, 2024).

Nurses' empowerment can be categorized into several types, each emphasizing different aspects of autonomy, authority, and support within the healthcare environment (Yu et al., 2024).

The main types are professional empowerment, which involves the growth of competencies, knowledge, and confidence essential to nurses for making informed clinical decisions; autonomous empowerment focuses on nurses' ability to make independent decisions regarding patient care; and organizational empowerment relates to the structural support provided by healthcare organizations that allow nurses to participate in decision-making processes (Dirik & Seren Intepeler, 2024).

Nurses' empowerment involves building strong relationships and communication among healthcare team members, political empowerment encourages nurses to engage in advocacy at the local, state, or national levels. (Şenol Çelik, Sariköse, & Çelik, 2024).

A culture of safety necessitates an understanding of the values, attitudes, beliefs, and conventions that are important to medical facilities.(Wazqar & Attallah, 2024).

Results from studies demonstrated that a robust patient safety culture correlates with a reduced incidence of patient complications and fewer adverse occurrences. This, thus, enhances their capacity to learn from previous errors and implement corrective actions. (Dirik, & Seren Intepeler, 2024).

One important evaluation factor in today's healthcare organizations is adherence to patient safety criteria. To do this, special conditions must be met. (Amirah et al., 2024).

The patient safety culture (PSC) emphasizes the elements of organizational culture related to patient safety. It is characterized as a pattern of individual and organizational conduct founded on shared thoughts and principles that persistently aims to reduce patient harm arising from the provision of care. (Alabdullah & Karwowski, 2024).

The culture of patient safety may be assessed by evaluating the values, beliefs, norms, and behaviors related to patient safety that are rewarded, supported, expected, and accepted in an organization. (Pedroso et al., 2023).

The Hospital Survey on Patient Safety Culture (HSOPSC), created by the Agency for Healthcare Research and Quality (AHRQ), facilitates the evaluation of safety culture by evaluating different aspects associated with values, beliefs, organizational norms, adverse event reporting, communication, leadership, and management.. (Reyes Ramos, & Costa Abós, 2024).

Significance of the Study

Empowerment in workplace environments is a critical factor for nurses operating within dynamic healthcare and educational contexts. A multitude of studies have reported the effects of nurse empowerment interventions on patient safety culture. Several studies revealed that nurses had profound sentiments of helplessness due to immeasurable inefficiency in health practice and colleagues' bad attitudes stemming from external changes. atmosphere plus insufficient administrative support (Al Otaibi et al., 2023).

Safety for patients is a crucial component in delivering excellent medical care. It is predicted that almost 400,000 deaths per year are attributable to avoidable injuries. Deficient interaction and teamwork, insufficient knowledge, and insufficient instruction were primary contributors to nursing mistakes. (Muñoz, Orrego, Montoya, & Sunol, 2023).

Consequently, a training program for nurses focused on patient safety and measures to enhance professional interaction is required to improve patient safety. Recommendations include the empowerment of nurses to ensure patient safety. (Albaalharith & A'aqoulah, 2023). Therefore, the purpose of this research is to evaluate the effect of nurses' empowerment training program on patients' safety culture, at King Khalid General Hospital, Hafar Albatin, Saudi Arabia.

Aim of the study

This study aimed to evaluate the effect of nurses' empowerment training program on patients' safety culture, at King Khalid General Hospital, Hafar Albatin, Saudi Arabia,

Research hypotheses:

H₁. Nurses' knowledge regarding empowerment improves after the implementation of the training program.

H₂. The patients' safety culture improves after implementing the empowerment training program.

Method

Study Design: A quasi-experimental design with pretest-posttest was utilized in conducting the study.

Setting: This research was carried out in all inpatient units in King Khalid General Hospital, Hafar Albatin, Saudi Arabia.

Participants: A convenient sample was used that included (115) nurses who are responsible for providing patient care in all above-mentioned settings and who fulfilled the criteria of having at least one year of experience and being available at the time of data collection.

Tools of data collection:

Three tools were used to collect data pertinent to the study:

Tools 1: Empowerment Knowledge Questionnaire:

It consists of two parts:

Part I: This part included personal data of the studied staff nurses, such as age, sex, experience in the unit, educational level, and presence of previous training.

Part II: It was developed by the researcher based on reviewing related literature (Hall, White, & Morrison, 2022, and Albasal, Eshah, Minyaw, Albashtawy, & Alkhawaldeh, 2022). To evaluate the knowledge of staff nurses about empowerment. It comprised questions in the form of true and false (11 questions) and multiple-choice questions (16 questions) related to empowerment. The questions were assigned a score of (1) for accurate responses, answers, and (zero) for an incorrect answer

- The scoring system of empowerment knowledge was categorized into three classifications determined by a specified threshold, as follows:
- Poor (<60% of the total score)
- Average (60%<75% of the total score)
- Good (≥75% of the total score)

Tool (II): Conditions of Work Effectiveness Questionnaire-II (CWEQ-II):

The CWEQ-II was developed by Laschinger, Finegan, Wilk, & Shamian (2012) to assess nurses' empowerment. It consisted of 18 items that measure opportunity (3), information (3), support (3), resources (3), formal power (3), and informal power (3). Scores for items on each of the six subscales are summed and averaged to provide a score for each subscale, on a Likert scale ranging from 1 to 5. (score range, 6–30).

The scoring system of Conditions of Work Effectiveness was classified into three categories as follows:

- Poor (<60% of the total score)
- Average (60%<75% of the total score)
- Good (≥75% of the total score)

Tool (III): The Hospital Survey on Patient Safety Culture

This tool was developed by the Agency for Healthcare Research and Quality publication (2019) to assess nurses' perception regarding patient safety culture. It consisted of 30 items categorized into nine domains as follows; Teamwork (4 items); Staffing and workplace (4 items); Organizational learning (3 items); Response to error (3 items); Clinical managers support for patient safety (3 items); Communication and feedback about error (3 items); Communication openness (3 items); Hospital management support for patient safety (3 items); and handoffs and Information exchange (4 items).

Respondents were measured by a 5-point scale ranging from (1) "Strongly disagree" to (5) "strongly agree" for all items, except items of two domains (communication and feedback about error and communication openness) range from 1 for never to 5 for always.

The scoring system of The Hospital Survey on Patient Safety Culture was classified into three categories, as follows:

- Poor (<60% of the total score)
- Average (60%<75% of the total score)
- Good (≥75% of the total score)

Validity and reliability:

The tools were tested for their face and content validity by five experts in the field of study, and accordingly, the necessary modifications were made. Reliability testing: The tools were tested for their reliability by using the Cronbach alpha test in the Statistical Package for the Social Sciences (SPSS) version 23. **Reliability** test of the study tools, Tools 1: Empowerment Knowledge Questionnaire, Tool (II): Conditions of

Work Effectiveness Questionnaire-II (CWEQ-II), and Tool (III): The Hospital Survey on Patient Safety Culture were tested by Cranach's Alpha. Reliability was computed and found to be (0.86), (0.89), & (0.93), respectively.

Pilot study

A pilot study was carried out for 10% (11) of the study participants to check and ensure the clarity and applicability of the tools, in addition to calculating the duration required for filling in the questionnaires. Any necessary modifications were made, participants in the pilot study were excluded from this study.

Data Collection Process:

- As a preparatory phase, a formal letter to conduct this research was submitted from Mansoura University, the faculty of Nursing, to the director of the King Khalid General Hospital, Hafar Albatin, Saudi Arabia. Then, an official written permission to carry out the study was obtained from the director of the King Khalid General Hospital, Hafar Albatin, Saudi Arabia, to obtain his approval to conduct the study after an explanation of the purpose of the study.
- Data is gathered through the staff nurses during work hours according to their available time.
- In the implementation phase, the empowerment knowledge questionnaire (Tool I) was distributed to assess nurses' knowledge regarding empowerment.
- Tool II: Conditions of Work Effectiveness Questionnaire-II (CWEQ-II), it was used to assess the level of empowerment, and tool (III); The Hospital Survey on Patient Safety Culture before implementing the program immediately post as well as after 3 months of program.
- According to the gathered data and through the assistance of a review of the literature, the researcher was designing a training program about empowerment for staff nurses.
- A training program was executed. The staff nurse practitioners were categorised into smaller cohorts. Each group comprises a specific number of staff nurses according to availability and workload for conducting the training.
- Furthermore, a schedule for 4 teaching sessions, different media to be included, and a program booklet were produced.
- Upon conclusion of the training program, the data gathering tools for the study were provided to the participants.

Ethical consideration:

Ethical permission was received from the Research Ethics Committee of the Faculty of Nursing at Mansoura University (code n 549). An accord was received from

the chosen hospital for data acquisition. The agreement of staff nurses who satisfied the inclusion criteria to complete the questionnaires and participate in the study constituted written informed permission from those who participated. Data was gathered by the researcher, who described the study's aim to all participants who consented to participate in the study. Privacy and discretion of participants' information were totally assured. Voluntary participation and withdrawal. Access to the study will be guaranteed at any time. as well.

Data analysis

The gathered data were systematically organised, tabulated, and subjected to statistical analysis utilising SPSS software (Statistical Package for Social Sciences, version 25, SPSS Inc., Chicago, IL, USA).

Results

Table (1): Personal characteristics of the studied staff nurses(n=115).

Personal characteristics	The studied staff nurses (n=115)	
	N	%
■Age years		
20-<35	47	40.9
35-<50	62	53.9
≥50	6	5.2
Range	20-51	
Mean± SD	35.06±6.97	
■Sex		
Male	41	35.7
Female	74	64.3
■Educational qualification		
Bachelor	92	80.0
Master	10	8.7
PHD	8	7.0
Other	5	4.3
■Experience years		
1-2	32	27.8
>2-4	83	72.2
Range	1-4	
Mean± SD	3.03±0.84	
■Presence of previous training		
Yes	67	58.3
No	48	41.7

Table 1 illustrates personal characteristics of the studied staff nurses. In this table, it was observed that 53.9% of the studied nurses had an age range from 35 to less than 50 years; however, the majority of them 64.3% were of the female gender. Concerning the studied nurses' educational level, 80.0% have a bachelor's degree, and 72.2%% of them had >2-4 years of experience, with a mean score of 3.03 ± 0.84 , and most of them were working in medical units, and 58.3% attending a training program.

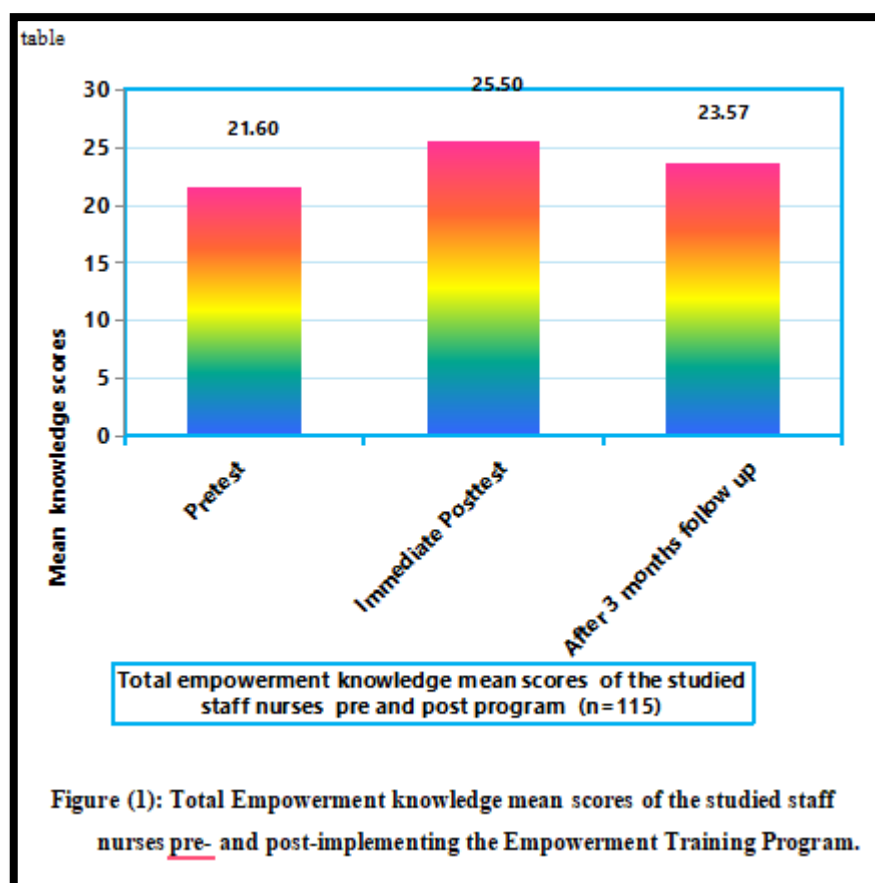


Figure 1 shows the total Empowerment knowledge mean scores among the analysed nursing staff pre- and post-implementing the empowerment training program. In this figure, it is observed that the highest mean score of knowledge was observed in post-implementation of the training program, with a mean of 25.50 ± 4.68 . There was a statistically significant difference in the level of total knowledge of the studied staff nurses pre- and post-training program, as $p = 0.0001$.

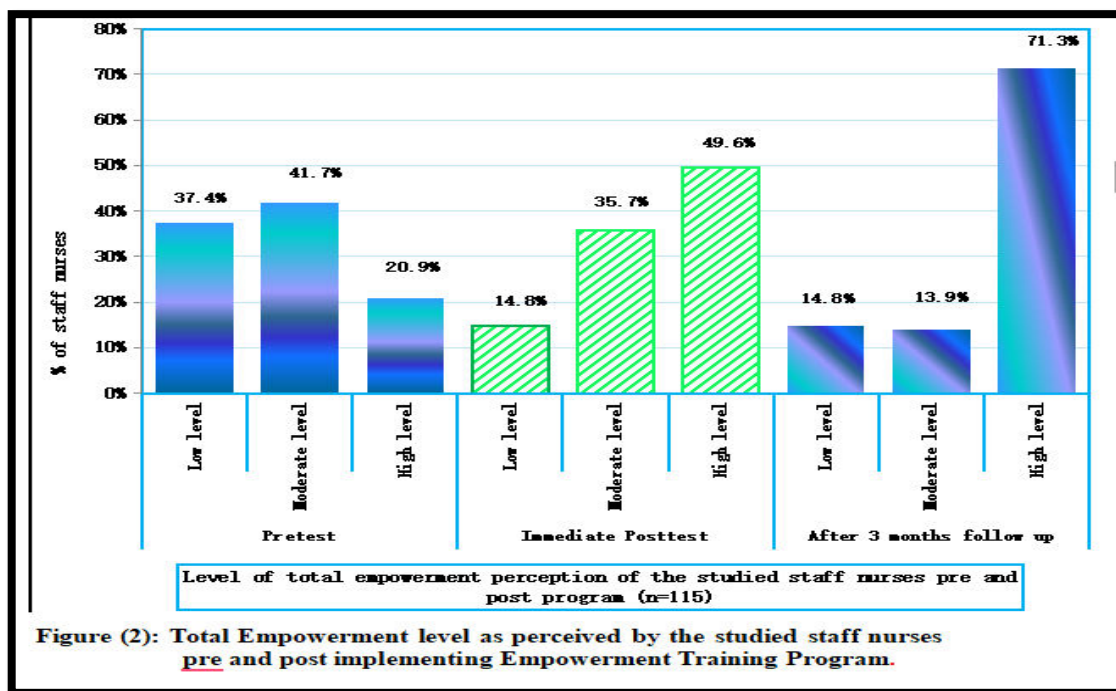


Figure (2) clarified level was observed via the studied nursing employees pre and post implementing empowerment training program; the level was improved from (20.9%) had high level pretest and improved to (49.6%) of right after a program and (71.3%) at follow up and still more than pre-program, This figure indicated a significantly statistically enhancement in the levels of empowerment subscales level.

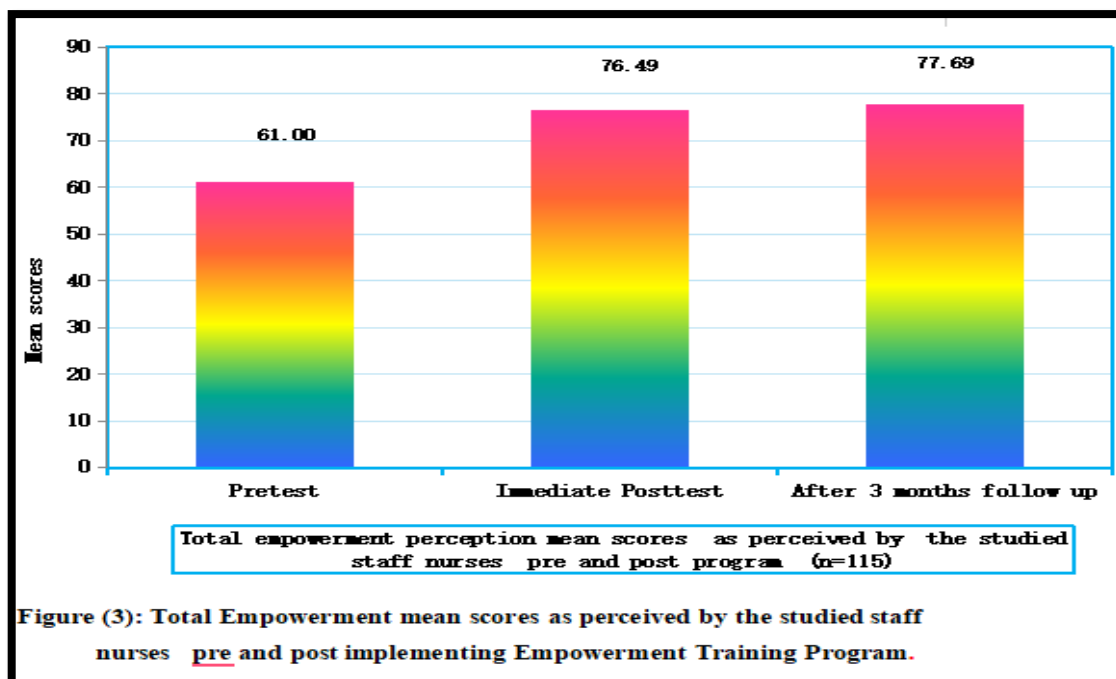


Figure 3) shows the Total Empowerment mean scores as perceived by the studied staff nurses pre and post-implementing the Empowerment Training Program. Immediately post program and (71.3%) at follow up, and still more than pre-program, within raising from 61.00% pretest to (76.49%) immediately post program, then (77.69%) at follow up. This figure revealed that there was a statistically significant improvement in the levels of empowerment subscales

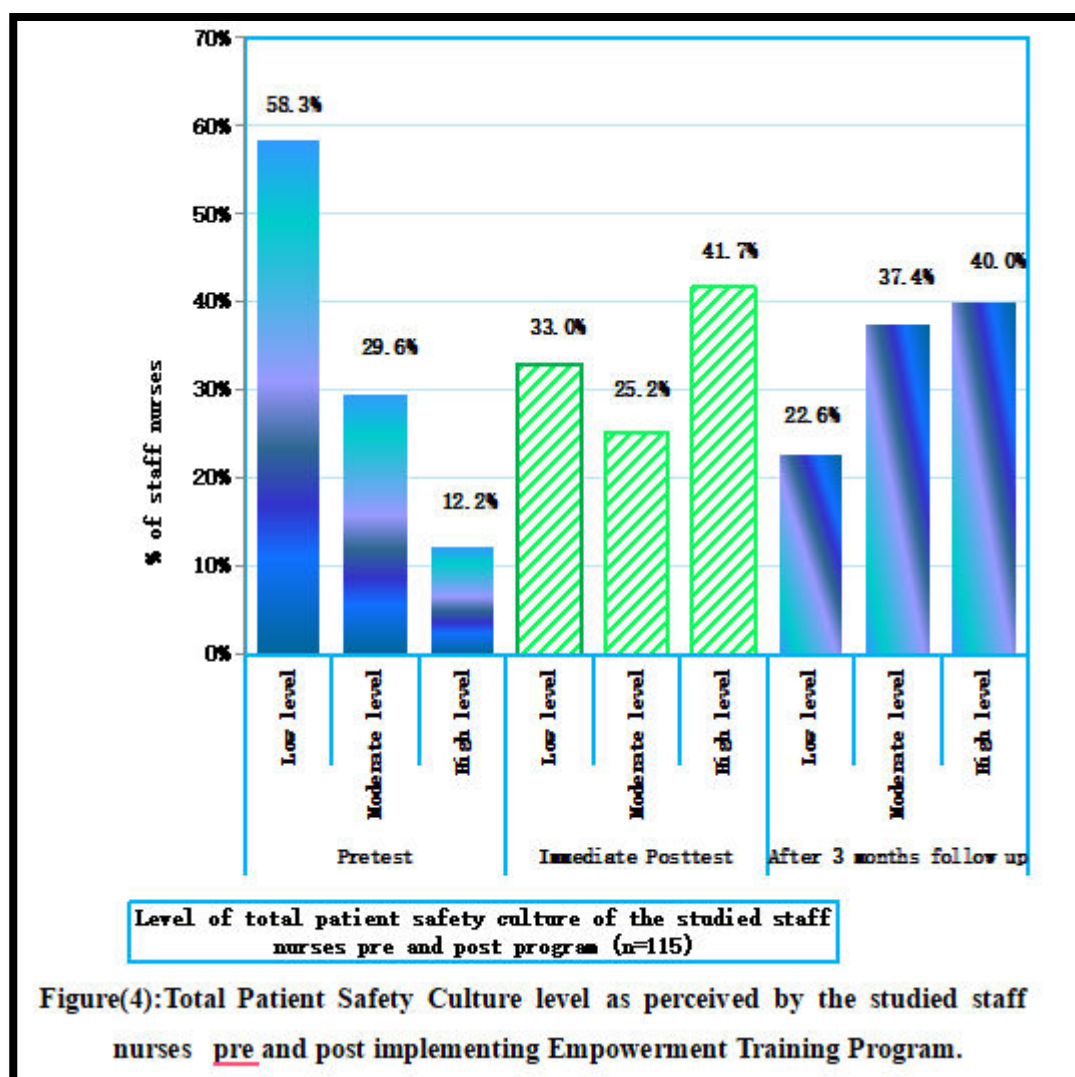


Figure 4 illustrates the level of patient safety culture as indicated by the participating nursing staff members. Pre and post implementing the empowerment training program. In this figure, it is observed that the best level of patient safety culture mean score for immediate post-implementation of the training program is at a high level (41.7%),

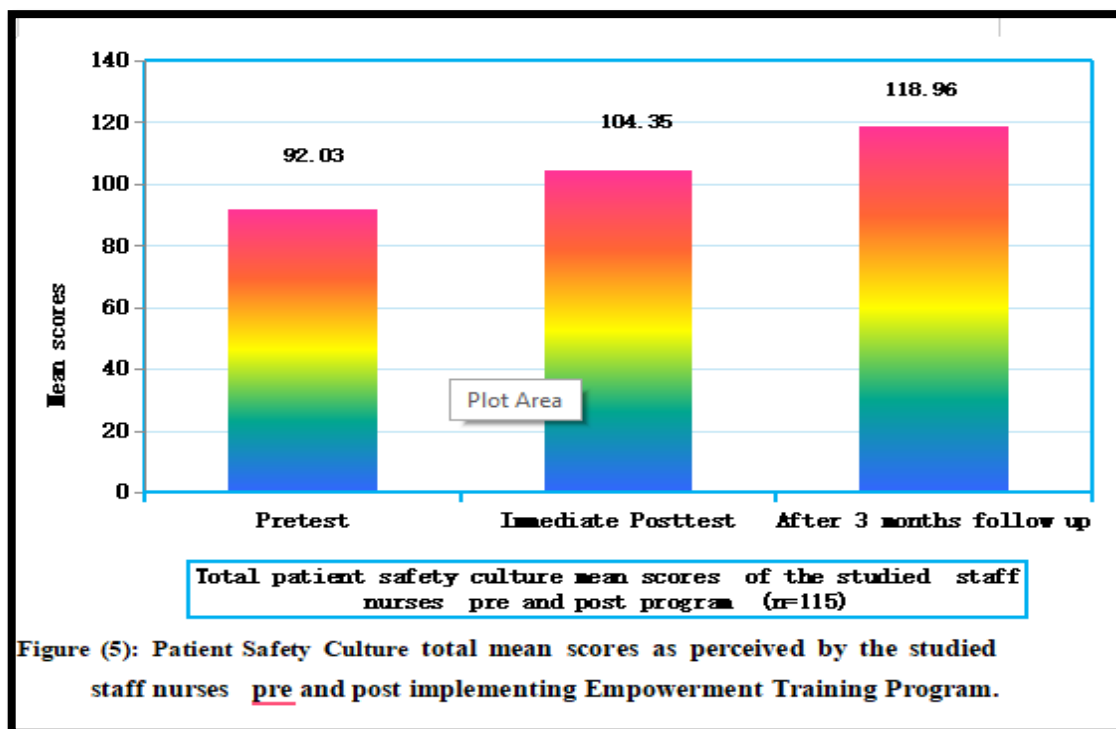


Figure (5) shows Patient Safety Culture total mean scores 92.03 ± 34.04 improved from pretest to 104.35 ± 23.61 in posttest, then 118.96 ± 21.40 after 3 months of follow-up. There was a statistically significant variation in the patient safety culture among the examined nursing staff prior to and after the training program, as $p = 0.0001$.

Table (2): Correlation between total scores of Empowerment knowledge and Empowerment perception and Patient Safety Culture total scores as perceived by the studied staff nurse| pre and post implementing Empowerment Training Program.

Variables	Total Empowerment knowledge of the studied staff nurses (n=115)					
	Pretest (Basic data)		Immediate posttest		After 3 months follow up	
	r	P value	r	P value	r	P value
Total Empowerment perception scores	0.673	0.0001*	0.593	0.0001*	0.780	0.0001*
Total Patient Safety Culture	0.827	0.0001*	0.537	0.0001*	0.704	0.0001*

*Statistically significant ($P < 0.05$) r =Correlation Coefficient

Table 2) displays the correlation between total scores of empowerment knowledge and empowerment perception and patient safety culture total scores as perceived by the studied staff nurses pre and post implementing the empowerment training program. It is observed that there was a statistically significant correlation between the total scores of empowerment knowledge and empowerment perception and patient safety culture total scores as perceived by the studied staff nurses pre- and post-implementing the empowerment training program.

Discussion

In daily practice, the linkage between empowerment and patient safety culture becomes visible in behaviors like speaking up, effective handoffs, and consistent use of safety checks. (Rusdi, Said, & Umar, 2024).

Therefore, this study aimed to evaluate the effect of nurses' empowerment training program on patients' safety culture, at King Khalid General Hospital, Hafar Albatin, Saudi Arabia.

The current study shows the total empowerment knowledge scores and their level in pre- and post-implementing the empowerment training program. In these results, it was observed that the highest level of knowledge mean score for post implementation of the training program had a high level with statistically significant differences in the level of total knowledge of the studied staff nurses pre and post training program. This may be related to receiving standardized information about empowerment (definitions, dimensions, rights/responsibilities, and practical applications), which many nurses may not study in depth during routine clinical work. When the same content is delivered consistently to all participants, variation in baseline understanding decreases, and post-program knowledge levels typically rise.

The current findings are supported by Teixeira, Nogueira, and Barbieri-Figueiredo (2023), who studied professional empowerment and evidence-based nursing and emphasized that professional empowerment, particularly when linked to evidence-based nursing education, significantly enhances nurses' knowledge, competencies, and confidence in clinical decision-making. Their findings align with the present study in demonstrating that empowerment initiatives lead to measurable improvements in nurses' knowledge levels, especially after targeted training interventions.

In alignment with Vainauskienė and Vaitkienė (2021), who studied the enablers of patient knowledge empowerment for self-management of chronic disease, the current results highlight the effectiveness of empowerment-focused educational strategies in improving knowledge outcomes. Although their review focused primarily on patient knowledge empowerment, it underscored that empowerment is a dynamic, learnable process facilitated through education and supportive environments, reinforcing the

present study's finding of statistically significant improvements in nurses' knowledge following the empowerment training program.

Along with Gottlieb, Gottlieb, and Bitzas (2021), who studied creating empowering conditions for nurses with workplace autonomy and agency: how healthcare leaders could be guided by strengths-based nursing and healthcare leadership. Their strengths-based leadership framework supports the notion that when nurses are exposed to empowerment-oriented training, their knowledge and perceived competence increase, which is consistent with the observed post-training high knowledge scores in the present study.

The current study clarified the empowerment total score and level as perceived by the studied staff nurses in pre and post implementing the empowerment training program; the level was improved for those who had a high-level pretest and improved immediately post program and at follow up, and still more than pre-program, with a rise in mean score in pretest to immediately post program then at follow up.

The current findings are supported by Alhurani, Alhalal, Al-Dwaikat, & Al-Faouri, (2020), who demonstrated that nurses working within structurally empowered environments report significantly higher empowerment levels and improved job performance. Their findings are consistent with the present study, which showed a statistically significant improvement in total empowerment scores and subscale levels immediately after the empowerment training program and at follow-up compared with pretest levels, indicating the effectiveness and sustainability of empowerment interventions.

In alignment with Moura et al. (2020), the current study confirms that structural empowerment is a dynamic construct that can be enhanced through organizational and educational interventions..

Current results showed patient safety culture total score and the level as perceived by the studied staff nurses in pre and post implementing empowerment training program and observed that the highest level of patient safety culture mean score for post implementation of training program with high level and improved from pretest to posttest, then after 3 months follow up with a statistically significance differences in the level of patient safety culture of the studied staff nurses pre and post training program as $p=0.0001$.

The current findings are supported by Abuosi et al. (2022), who reported that stronger safety culture practices within healthcare facilities were associated with improved patient safety outcomes and enhanced reporting behaviors..

In alignment with Agbar et al. (2023), their meta-analysis demonstrated consistent post-intervention gains across safety culture dimensions, directly aligning with the current study's observed increase in patient safety culture mean scores from pretest to posttest and sustained improvement at three-month follow-up.

Along with Camacho-Rodriguez et al. (2022), the present findings reflect patterns observed in Latin American hospitals, where safety culture levels varied but improved when educational and organizational interventions were implemented.

As well as Garay et al. (2023), the current study supports evidence that interventions specifically designed for nursing professionals—such as empowerment and training programs—are effective in enhancing safety culture. Garay and colleagues documented measurable improvements in safety culture following intervention implementation,

The findings of the present study are consistent with those reported by Amiri, Khademian, and Nikandish (2018), who demonstrated that implementing a nurse empowerment educational program resulted in statistically significant improvements in nurses' empowerment-related outcomes. The results of the present study are also in agreement with the findings of Mohamed, Wahab, and Mostafa (2023), who reported a statistically significant positive relationship between organizational empowerment and staff nurses' perceptions of their work-related behaviors.

The findings of the present study are consistent with those reported by Suryani, Letchmi, and Said (2024). Their study demonstrated that nurses who participated in the empowerment program showed higher awareness, adherence to safety protocols, and proactive engagement in safety practices compared to baseline measurements. The findings of the current study are also consistent with the results reported by Moustafa and Gabr et al. (2025) regarding the relationship between empowerment and patient safety culture. The referenced study concluded that structural empowerment significantly influences patient safety culture, demonstrating a meaningful statistical association between empowerment and safety outcomes among staff nurses. In both studies, greater empowerment (whether structural empowerment or higher empowerment knowledge) aligns with stronger patient safety culture perceptions, supporting the notion that empowering nurses is positively linked to improvements in safety culture within clinical settings.

The current study observed that there was a statistically significant relationship between total empowerment perception level and level of patient safety culture as perceived by the studied staff nurses, pre- and post-implementing the empowerment training program. This result may be related to the fact that increased empowerment perception enhances nurses' confidence, autonomy, and access to resources, enabling them to engage more effectively in patient safety practices. The empowerment training likely strengthened their ability and motivation to prioritize and uphold safety standards, leading to a significant improvement in patient safety culture.

This result is consistent with Rusdi, Said, & Umar, (2024). International evidence from a study in Indonesia demonstrated that empowerment had a positive impact on

patient safety culture. In addition, a study conducted in Turkey demonstrated a significant positive association between structural empowerment and patient safety culture, where empowerment and work environment variables together explained a substantial proportion of variance in nurses' safety culture perceptions (Pamungkas *et al.*, 2016). This aligns with the present findings that nurses' perceptions of empowerment are linked to a stronger patient safety culture score.

The current study observed that there was a statistically significant correlation between the total scores of empowerment knowledge and empowerment perception and patient safety culture total scores as perceived by the studied staff nurses, pre- and post-implementing the empowerment training program. This result may be related to the fact that when staff nurses acquire greater knowledge about empowerment, they are better able to understand their roles, responsibilities, and the impact of their actions on patient care.

The significant correlation observed in this study suggests that the empowerment training program effectively strengthened both nurses' understanding of empowerment and their perception of patient safety, leading to improved overall safety outcomes.

The findings of the current study are consistent with those reported by Youssef, Abdelghany, & Mahmoud, (2025). Their study demonstrated a statistically significant relationship between empowerment knowledge, empowerment perception, and patient safety culture, which aligns with the current study's results. This result also agrees with the study conducted by Yilmaz & Duygulu (2021) on developing empowerment and patient safety culture among hospital nurses; statistically significant increases were observed after implementing a training program in several measures related to empowerment and organizational safety culture. The study by Alshammari *et al.* (2022) was conducted on healthcare facilities in Saudi Arabia and reported a significant positive relationship between nurse empowerment and patient safety culture, indicating that higher levels of empowerment were associated with more positive perceptions of safety culture among nurses.

Conclusion

Based on the study findings, it was concluded that the empowerment training program significantly improved staff nurses' empowerment knowledge, perceived empowerment, and patient safety culture. Empowerment knowledge increased clearly after the intervention, with the highest mean scores recorded at the posttest, and statistically significant differences between pre- and post-program results confirmed the program's effectiveness. Perceived empowerment also improved across total scores and subscales immediately after completion and remained higher at follow-up, indicating a sustained, multidimensional impact rather than a temporary effect. Patient safety

culture improved as well, with the highest mean scores post-intervention and continued gains at the three-month follow-up; the significant pre–post difference

($p = 0.0001$) supports the role of empowerment-based training in strengthening and maintaining a positive safety culture.

Recommendations:

For nursing staff:

- Participate actively in empowerment training and apply learned skills (assertive communication, advocacy, shared decision making) during daily care.
- Use structured communication (e.g., SBAR) to escalate safety concerns early and clearly, especially for patient deterioration and high-risk medications.
- Engage in continuous learning by reviewing unit protocols, evidence-based guidelines, and patient safety alerts on a scheduled basis.
- Integrate empowerment concepts into routine supervision by delegating appropriately, providing autonomy with accountability, and supporting staff decision-making.
- Ensure regular safety huddles and no punitive feedback after incident reports to sustain reporting and learning behaviors.
- Identify staff learning needs and arrange targeted in-service sessions (medication safety, early warning signs, communication, conflict management).
- Monitor empowerment and safety culture indicators (audits, checklists, patient complaints, incident trends) and share results transparently with staff.
- Advocate for resources (staffing, equipment, training time) and remove barriers that prevent nurses from applying empowerment practices.
- Institutionalize empowerment training as part of orientation and annual competency plans, with protected time for attendance.
- Strengthen structures that support empowerment: clear policies, accessible guidelines, decision-support systems, and fair performance appraisal.

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