

RESEARCH

Open Access



The effect of clinical supervision model on nurses' self-efficacy and communication skills in the handover process of medical and surgical wards: an experimental study

Faezeh Gheisari¹ , Sedigheh Farzi^{2*} , Mohammad Javad Tarrahi³ and Tahere Momeni-Ghaleghasemi⁴

Abstract

Background The handover process is a vital part of patient safety continuity, particularly conducted between nurses at the end of shifts. Nurses often face challenges in handover due to a lack of self-efficacy and inadequate communication skills. The clinical supervision model, by providing emotional, educational, and organizational support, aids in skill acquisition and instills confidence.

Objective This study was conducted to investigate the effect of the clinical supervision model on nurses' self-efficacy and communication skills in the handover process within medical and surgical wards.

Method This experimental two-group (pre-and post-test) study was conducted in 2024 at selected hospital affiliated with Isfahan University of Medical Sciences, Isfahan, Iran. Convenience sampling was used, and participants were randomly assigned to either the intervention or control group. Data were collected using the ISBAR communication checklist, communication clarity, the Sherer General Self-Efficacy Scale (GSES), the Visual Analog Scale (VAS) for handover self-efficacy, and the Manchester Clinical Supervision Scale (MCSS). The clinical supervision model and routine supervision were implemented in six sessions for the intervention and control groups, respectively. Data were analyzed using SPSS version 16, employing independent t-tests, covariance analysis, paired t-tests, chi-square tests, and repeated measures ANOVA with a significance level of $p < 0.05$.

Results No significant differences were observed between the intervention and control groups in terms of baseline characteristics. Inter-group analysis indicated that there were no significant differences in the scores of self-efficacy, ISBAR, and communication clarity between the control and intervention groups before the intervention ($P > 0.05$). According to the intra-group analysis, the ISBAR and communication clarity scores in the intervention group significantly increased over time ($p < 0.001$), whereas no such increase was observed in the control group. The intervention group showed a significant increase in general self-efficacy ($p < 0.001$) compared to the control group. Although both groups showed a significant improvement in handover self-efficacy, the mean scores of the intervention group were higher than those of the control group ($p < 0.001$). The mean score of the Manchester Clinical

*Correspondence:

Sedigheh Farzi
Sedighehfarzi@nm.mui.ac.ir

Full list of author information is available at the end of the article



© The Author(s) 2024. **Open Access** This article is licensed under a Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License, which permits any non-commercial use, sharing, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if you modified the licensed material. You do not have permission under this licence to share adapted material derived from this article or parts of it. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <http://creativecommons.org/licenses/by-nc-nd/4.0/>.

Supervision Scale in the intervention group was 128.98, indicating the high effectiveness of implementing the clinical supervision model.

Conclusion The findings indicated that the use of the clinical supervision model improves self-efficacy and communication skills in the handover process of nurses in medical and surgical wards. Therefore, it is recommended to use this model in handover training to enhance the quality of care and improve patient safety.

Keywords Handover, Nurses, Clinical supervision, Self-efficacy

Introduction

The handover process involves the efficient transfer of clinical information to delegate professional responsibility and accountability for patient care to another individual or professional group [1]. This process is one of the top five priorities for improving patient safety worldwide [2]. Handover, especially at the end of shifts, occurs at least 2–3 times daily and is an integral part of nursing practice. With the increasing emphasis on interprofessional patient care, the frequency of handovers has also increased [3].

Inefficient handover leads to incomplete information transfer, resulting in repeated assessments, treatment delays, medication errors, avoidable readmissions, increased complications and patient mortality, and additional financial burdens on the healthcare system [4–6]. The United State Safety Committee has reported that poor handover is the primary cause of 65% of adverse events and 90% of root causes of errors [7]. Many nurses suffer from omissions, inaccuracies, and irrelevant information during handovers [5]. Essential information is omitted in 43.17% of handovers and nursing documentation [8], and approximately 22% of adverse events related to nursing care are associated with poor handovers [9]. Literature reviews have shown that nurses often struggle with handover execution due to a lack of self-efficacy and communication skills [4, 10, 11].

Self-efficacy is the extent of an individual's belief in their ability to complete a task or achieve a goal [12]. Self-efficacy increases confidence and motivation to communicate with others [13] and is an important factor in improving the quality of patient care [14]. Low self-efficacy among nurses leads to delays in intervention and negatively impacts patient care [15, 16]. Also, the World Health Organization (WHO) has identified communication failure as the primary cause of adverse events in healthcare [17] and stated that precise and skilled communication should be a high priority in handover [18].

To improve self-efficacy in handovers, nursing managers should create a positive organizational climate for relationships among nurses so that they feel satisfied with their communication with colleagues. They should also provide opportunities, such as education programs or systems, for nurses to develop their communication skills [19]. The ISBAR describes a structured form of handover

and facilitates intra and interprofessional communication within healthcare providers has been endorsed by the WHO [20, 21]. (Table 1).

The clinical supervision model (CSM) is one of the clinical education models for nurses designed to reduce the gap between theory and practice [22]. This model is a structured program in which nurses receive guidance and support from a trained supervisor, who provides feedback on their performance [23]. In cases where 'cutting corners' and 'gaps in care' are regular occurrences in daily nursing practice; however, this often goes unnoticed and subsequently continues [24], the CSM provides an opportunity for reflection on current practice and the development and improvement of future practice [25]. The CSM aids learning through emotional, educational, and organizational support [26] and it's recommended to enhance the quality of patient care in healthcare settings [27]. Education and support to enhance self-efficacy and communication skills in nurses are identified as two influential factors in improving effective handover. Therefore, the present study was conducted with the aim of examining the impact of the clinical supervision model on nurses' self-efficacy and communication skills in the handover process within medical and surgical wards.

Methods

This experimental two-group study with a pre- and post-test design was conducted in 2024 in the selected hospital affiliated with Isfahan University of Medical Sciences, Isfahan, Iran. This study was single-blinded by a statistical analyst.

Participants

Participants included all nurses working in the medical and surgical departments of selected hospital. Inclusion criteria were willingness to participate in the study, holding a bachelor's degree, being a nurse responsible for direct patient care, and not using the ISBAR framework prior to the study. Exclusion criteria were discontinuation of collaboration with the study department and unwillingness to continue participation in the study.

Sample size

The sample size was estimated based on a similar study [4] with the following parameters: $S_1 = 15.11$, $S_2 = 12.10$,

Table 1 The ISBAR handover framework

I ntrouction – identify yourself, your role and the patient
S ituation – state the patient’s main problem
B ackground – give the relevant clinical history
A ssessment – give the relevant observations and assessment of the patient’s condition
R ecommendation – state the course of action or response that you are recommending

$\mu_1 = 60.94$, $\mu_2 = 51.54$, $\alpha = 0.05$, and $\beta = 0.2$, assuming a 15% attrition rate, resulting in an estimated sample size of 80 nurses.

The researcher first visited the hospital, which had two medical departments (medical 1 and medical 2) and two surgical departments (Women’s Surgery and Men’s Surgery). Using a random number table, one medical department and one surgical department were selected as the

intervention group, while the other medical and surgical departments were designated as the control group. From medical 1, medical 2, and Women’s Surgery departments, each with 20 nurses, all were included in the study (census sampling). From the Men’s Surgery department, which had 30 nurses, 20 were randomly selected using the random number table. Thus, the number of samples in each control and intervention group was 40 (Fig. 1).

Study tools

Data were collected using a demographic questionnaire, ISBAR Communication Checklist and Communication Clarity, Visual Analog Scale (VAS), Sherer Self-Efficacy Scale (GSES) and Manchester Clinical Supervision Scale (MCSS).

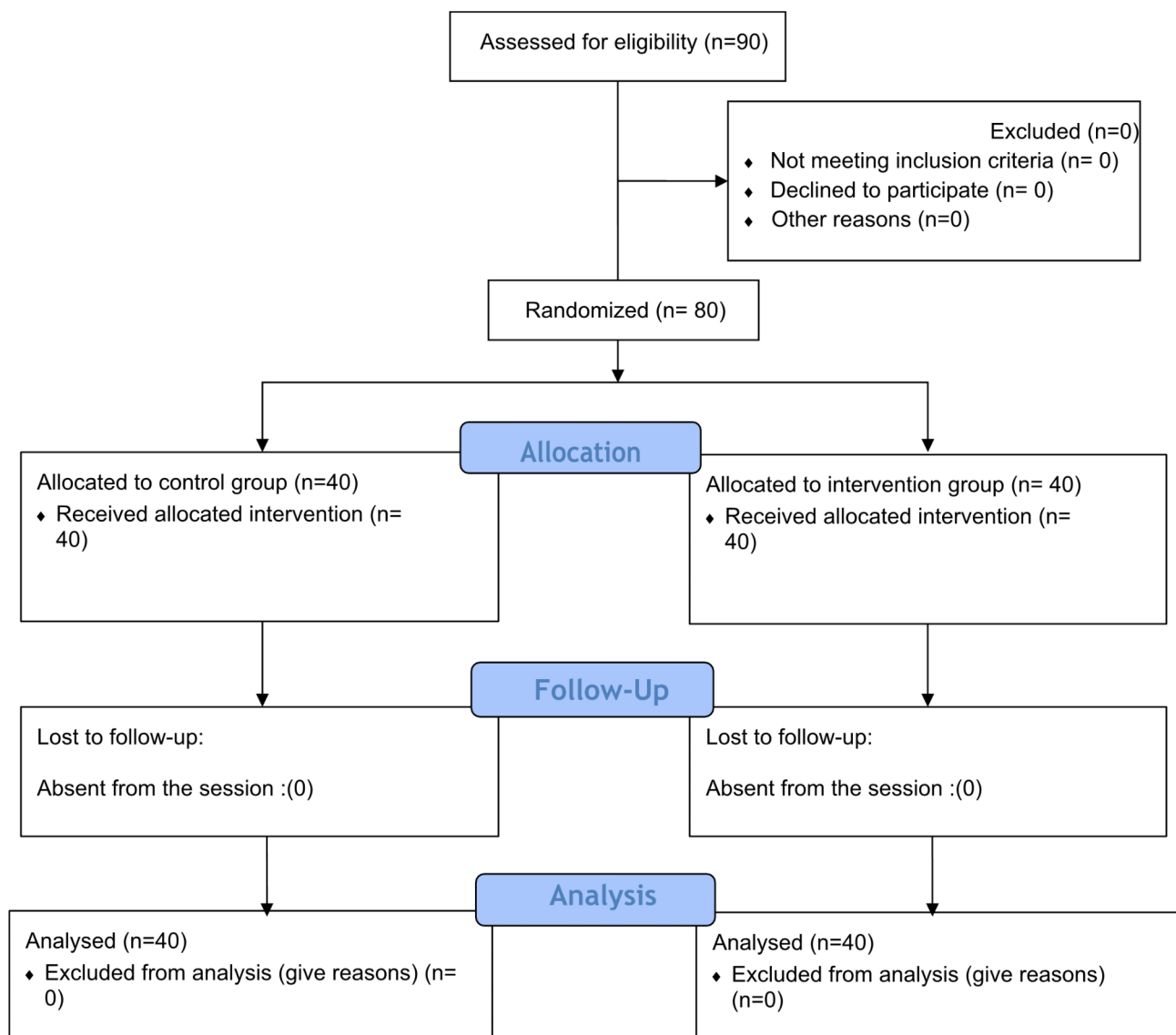


Fig. 1 Consort flowchart

The demographic questionnaire included individual information (age, gender, marital status) and professional details (work experience, average number of shifts per month, and average number of patients under care).

ISBAR communication checklist

This checklist includes 12 items rated on a 3-point Likert scale (0=Not Implemented, 1=Incomplete, 2=Acceptable), with a total score range from 0 to 24. This scale is used to evaluate nurses' performance in implementing the ISBAR framework during handovers [4, 28]. The checklist was translated into Persian, and its content and face validity were assessed with the consultation of 10 nursing faculty experts specializing in handover and shift reports. The Content Validity Index (CVI), Content Validity Ratio (CVR), and face validity were 1, 1, and above 1.5, respectively. External reliability was assessed using test-retest method and its intraclass correlation coefficient (ICC) was 0.803 (95% CI: 0.628–0.901, $p < 0.001$). Internal reliability, measured by Cronbach's alpha, was 0.739.

The communication clarity checklist

This checklist consists of 7 items, rated on a 5-point Likert scale, with a total score range of 7 to 35. The goal of this scale is to assess participants' ability to identify important information and convey it accurately and understandably. Higher scores indicate greater clarity in their handovers [18]. The checklist was translated into Persian, and its content and face validity were assessed with the consultation of 10 nursing faculty experts specializing in handover and shift reports. The Content Validity Index (CVI), Content Validity Ratio (CVR), and face validity excluding item 8 which was removed, for the remaining items were 0.94, 1, and above 1.5, respectively. External reliability was assessed using test-retest method and its intraclass correlation coefficient (ICC) was 0.941 (95% CI: 0.880–0.972, $p < 0.001$). Internal reliability, measured by Cronbach's alpha, was 0.871. Communication Clarity assesses the clarity of communication, complementing the ISBAR checklist in evaluating the effectiveness of communication skills.

The visual analog scale (VAS)

This scale was used to assess participants' self-efficacy in performing handovers. Participants were asked to indicate on a scale from 0 to 100 how confident they felt about their ability to perform handovers (0=not confident at all, 100=very confident). The VAS is a reliable and valid method for measuring subjective feelings with minimal distortion and bias [4]. Its validity as a measure of self-efficacy has been confirmed by Turner et al. (2008) [29].

The sherer self-efficacy scale (GSES) questionnaire

This questionnaire consists of 17 items, rated on a 5-point Likert scale (1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree), with a total score range from 17 to 85. The questionnaire was originally developed and psychometrically validated by Sherer and colleagues [30]. The validity and reliability of the Persian version of the questionnaire have been confirmed in Iran [31].

The manchester clinical supervision scale (MCSS)

This scale was used to assess the effectiveness of the clinical supervision model. The MCSS was created in 1995 at the University of Manchester, England [32]. This questionnaire consists of 32 items covering 7 subscales: Trust and Relationships, Supervisor's Advice and Support, Care and Improved Skills, Importance and Value of Clinical Supervision, Finding Time, Personal Issues, and Feedback. Each item is rated on a 5-point Likert scale: Strongly Disagree (1 point), Disagree (2 points), Neutral (3 points), Agree (4 points), and Strongly Agree (5 points). Scores for each subscale are summed, with higher scores indicating better clinical supervision performance in that area. The validity and reliability of the Persian version of the questionnaire have been confirmed by Khani et al. (2009), and the effectiveness score was reported as 122 and more [33].

Procedure

Initially, the researcher approached nurses during their free time, explained the importance of handover and the negative impacts of incomplete handover, and outlined the study procedure. Informed consent was obtained from the participants, and they were provided with the Sherer General Self-Efficacy Scale (GSES) and the Visual Analog Scale (VAS) to assess their self-efficacy in handovers. Additionally, the ISBAR scores and communication clarity were assessed using the checklist by observing their handover performance in both the intervention and control groups.

Intervention group

In the intervention group, handover based on the ISBAR framework were implemented through clinical supervision model, which included three phases as follows [34]:

Phase 1 In this phase, the nurse educator organized individual meeting outside the regular shift times for the nurses to avoid any stress related to their clinical duties. During this meeting, the importance of handover, the consequences of incomplete handover for both nurses and patients, and criteria for effective handover were discussed. The CSM, its benefits, stages, and the roles of the supervisor and nurses were also explained. Questions

were answered, ambiguities were addressed. The ISBAR-based handover checklist was then distributed, and each item was discussed. Nurses were asked to apply the ISBAR framework to two clinical cases and provide feedback on the checklist items. The nurses were reminded that in future supervision sessions, they were expected to use the checklist items during patient handovers.

Phase 2 One week after the first phase, the observer attended the medical and surgical wards to conduct clinical supervision sessions while the supervised nurses were completing their shifts and handing over patients to the next shift nurse at the bedside. In this study, a nurse educator with years of experience in supervision and teaching was selected for the role. She was competent in communication skills, providing feedback, and nursing handovers. The clinical supervision sessions were held at the bedside, and the nurses' performance was assessed using ISBAR communication and Communication Clarity checklists, also at the bedside. These sessions, conducted over 3 months, occurred 6 times (two morning shifts, two afternoon shifts, and two night shifts per participant) at two-week intervals. During these sessions, nurses brought the ISBAR checklist, followed its items, received feedback from the supervisor if errors were made, and discussed any issues with the supervisor. The nurses' communication skills scores were calculated according to the checklist in each session. Each clinical supervision session lasted between 40 and 60 min and was conducted individually.

Phase 3 In this phase, the Manchester scale was used at this stage to determine the effectiveness of implementing the clinical supervision model.

Control group For the control group, the nurse educator organized individual meeting outside the regular shift times for the nurses to avoid any stress related to their clinical duties. During this meeting the study objectives and the number of supervision sessions were discussed, and it was mentioned that their handover performance would be evaluated based on the ISBAR communication checklist and communication clarity during the sessions. However, they were not provided with the checklist. The control group also underwent 6 supervision sessions, held at two-week intervals over a period of 3 months. During these sessions, the nurses' performance using ISBAR communication and Communication Clarity checklists at the bedside during handovers was assessed and recorded by the supervisor. Although feedback on erroneous performance was not provided, any questions from the nurses regarding handovers were addressed.

At the end of the study, the general self-efficacy scores and Visual Analog Scale (VAS) scores for both the

control and intervention groups were obtained through self-reports by the nurses.

Data analysis

Data were analyzed using SPSS version 16 (SPSS, Inc., Chicago, IL, USA). Descriptive statistics (frequency, percentage, mean, and standard deviation) were used to describe the data. The normality of quantitative variables was assessed using the Kolmogorov-Smirnov test. To compare qualitative variables between the two groups, the chi-square test was used. To compare means between groups and within groups, independent t-tests, multivariate analysis of covariance (MANCOVA), and paired t-tests were employed. Additionally, repeated measures analysis of variance (ANOVA) was used to compare mean scores at six time points. A significance level of <0.05 was set.

Results

There were no significant differences between the intervention and control groups regarding demographic characteristics ($p>0.05$). Since the p -value for gender was close to 0.05, it could have been a confounding factor; therefore, it was considered as such in the analyses (Table 2).

The independent t-test revealed no significant difference in baseline ISBAR scores between the two groups. Repeated measures analysis showed that changes in ISBAR scores depended on the type of group, with the mean ISBAR scores significantly increasing over time in the intervention group ($p<0.001$), while there was no significant change in the control group ($p=0.780$). Multivariate analysis of covariance was used to compare scores between the two groups at six time points, accounting for gender and baseline ISBAR scores as confounders. The results indicated significant differences in mean ISBAR scores between the two groups across all measurement points ($p<0.001$) (Table 3).

The independent t-test indicated no significant difference between the two groups in baseline communication clarity scores. Repeated measures analysis revealed that changes in communication clarity scores were dependent on the group type. Specifically, the mean scores for communication clarity significantly improved over time in the intervention group ($p<0.001$), while no such improvement was observed in the control group ($p=0.882$). A multivariate analysis of covariance was used to compare scores between the two groups across six time points, considering gender and baseline communication clarity scores as confounders. The results demonstrated significant differences in mean communication clarity scores between the two groups across all measurement points ($p<0.001$) (Table 4).

Table 2 The baseline characteristics of the nurses in the intervention and control groups

Variable		Intervention group	Control group	t/ X2	PValue ^a
		Mean ± SD or N (%)	Mean ± SD or N (%)		
Gender	Male	10(25%)	4(10%)	3.117	0.077
	Female	30(75%)	36(90%)		
Marital status	Single	9(22.5%)	8(20%)	0.075	0.785
	Married	31(77.5%)	32(80%)		
Age (Year)		32.23 ± 8.56	32.05 ± 6.57	0.103	0.919
Experience of work (Year)		7.38 ± 6.49	7.93 ± 5.92	0.396	0.693
Mean shift (Number per month)		26.48 ± 1.99	26.43 ± 1.38	0.131	0.896
General self-efficacy score before intervention		65.60 ± 7.98	66.73 ± 8.25	0.620	0.537
Handover self-efficacy score before intervention		73.00 ± 10.61	73.88 ± 14.78	0.304	0.762
ISBAR score before intervention		9.10 ± 3.26	9.33 ± 2.99	0.322	0.748
Communication Clarity score before intervention		15.25 ± 4.21	15.58 ± 4.29	0.342	0.733

Data presented as Mean ± SD or n (%), SD: Standard Division, ^aP values are based on the independent sample t- test or chi square

Table 3 ISBAR score^a of interventions and control group during clinical supervision sessions

Session	Intervention group	Control group	t/f	PValue ^b
	Mean ± SD	Mean ± SD		
Before Intervention	9.10 ± 3.26	9.33 ± 2.99	0.322	0.748
First	14.70 ± 3.23	9.55 ± 3.03	92.459	< 0.001
Second	16.80 ± 3.24	9.38 ± 3.49	186.340	< 0.001
Third	17.98 ± 3.27	9.12 ± 3.01	268.497	< 0.001
Forth	20.77 ± 2.22	9.40 ± 3.31	672.282	< 0.001
Fifth	22.48 ± 1.65	9.58 ± 3.32	846.578	< 0.001
Sixth	23.30 ± 1.14	9.63 ± 3.16	1207.521	< 0.001
Pvalue –Time ^c	< 0.001	0.780		
Pvalue – Interaction ^c	< 0.001			
Pvalue – Intervention ^c	< 0.001			

^a Maximum possible score = 24, ^b Independent sample t-test or Multivariable Analyze of Covariance (MANCOVA), ^c Repeated measure ANOVA

Table 4 Communication clarity score^a of interventions and control group during clinical supervision sessions

Session	Intervention group	Control group	t/f	PValue ^b
	Mean ± SD	Mean ± SD		
Before Intervention	15.25 ± 4.21	15.58 ± 4.29	0.342	0.733
First	18.80 ± 4.46	15.80 ± 3.61	24.310	< 0.001
Second	21.72 ± 4.86	15.63 ± 4.67	78.143	< 0.001
Third	23.80 ± 4.36	15.50 ± 4.05	154.542	< 0.001
Forth	26.83 ± 3.69	15.77 ± 4.33	343.275	< 0.001
Fifth	30.02 ± 3.68	15.80 ± 4.13	495.164	< 0.001
Sixth	31.80 ± 3.04	16.03 ± 4.67	591.561	< 0.001
Pvalue –Time ^c	< 0.001	0.882		
Pvalue – Interaction ^c	< 0.001			
Pvalue – Intervention ^c	< 0.001			

^a Maximum possible score = 35, ^b Independent sample t-test or Multivariable Analyze of Covariance (MANCOVA), ^c Repeated measure ANOVA

Finally, a pairwise comparison of the scores for both ISBAR and clarity communication of the intervention group sessions, using the LSD test, revealed a significant increase in scores for each supervision session compared to the other sessions ($p < 0.001$).

The independent t-test revealed no significant difference between the two groups in baseline general self-efficacy scores ($p = 0.537$). The multivariate analysis of covariance indicated that the mean general self-efficacy

scores in the intervention group were significantly higher at the end of the intervention (considering gender and baseline self-efficacy scores as confounders) ($p < 0.001$). The paired t-test showed a significant difference in the mean scores of the intervention group before and after the clinical supervision sessions ($p < 0.001$), whereas no significant difference was observed in the control group before and after the intervention ($p = 0.872$) (Table 5).

Table 5 Difference in pre-post general self-efficacy score ^a between the intervention and control groups

Group	Before intervention	After intervention	PValue ^b
	Mean ± SD	Mean ± SD	
Intervention group	65.60 ± 7.98	72.05 ± 6.80	< 0.001
Control group	66.73 ± 8.25	66.63 ± 9.45	0.872
PValue ^c	0.537	0.001	
t/f	0.620	11.947	

^a Maximum possible score = 85, ^b Paired sample t-test, ^c Independent sample t-test or Multivariable Analyze of Covariance (MANCOVA)

Table 6 Difference in pre-post-handover self-efficacy score ^a between the intervention and control groups

Group	Before intervention	After intervention	PValue ^b
	Mean ± SD	Mean ± SD	
Intervention group	73.00 ± 10.61	95.63 ± 6.72	< 0.001
Control group	73.88 ± 14.78	78.12 ± 13.76	0.012
PValue ^c	0.762	< 0.001	
t/f	0.304	36.885	

^a Maximum possible score = 100, ^b Paired sample t-test, ^c Independent sample t-test or Multivariable Analyze of Covariance (MANCOVA)

Table 7 Manchester Clinical Supervision Scale: subscales and total scores

Subscale	Possible score range	Actual score range	Mean ± SD ^a
Trust and rapport	6–30	16–30	24.95 ± 3.38
Supervisor advice and support	5–25	16–25	21.23 ± 2.33
Improved care and skill	7–35	20–33	27.48 ± 2.56
Importance and value	4–20	12–20	17.65 ± 2.03
Finding time	4–20	10–20	15.80 ± 2.59
Personal issues	3–15	4–14	8.93 ± 2.85
Reflection	3–15	11–15	12.95 ± 1.38
Total score	32–160	111–152	128.98 ± 10.24

^a Standard Deviation

The independent t-test indicated no significant difference between the two groups in baseline scores for delivery and handover self-efficacy ($p=0.762$). The multivariate analysis of covariance showed that the mean scores for delivery and handover self-efficacy in the intervention group were significantly higher at the end of the intervention (considering gender and baseline scores as confounders) ($p<0.001$). The paired t-test revealed a significant difference in the mean scores of the intervention group before and after the clinical supervision sessions ($p<0.001$). Likewise, the change in the mean scores in the control group was significantly different before and after the intervention ($p=0.012$). However, the mean scores of the intervention group were higher than those of the control group (Table 6).

The mean total score for the Manchester Clinical Supervision Scale (MCSS) was 128.98, indicating an excellent effectiveness of the Clinical Supervision Model (CSM) from the perspective of the nurses (Table 7).

Discussion

This study aimed to assess the impact of the Clinical Supervision Model (CSM) on the handover process among nurses in medical and surgical wards, based on

the ISBAR framework, to enhance communication skills and self-efficacy, which are essential components of patient care. The results of our study demonstrated the significant impact of the CSM on improving nurses' communication skills and self-efficacy in the handover process. The CSM plays a crucial role in enhancing skills by providing appropriate feedback and creating a supportive learning environment. In the CSM, the supervisor identifies individual needs through observing performance, plans for improvements, and fosters a supportive and motivating environment that encourages active participation in skill development [35]. The effective supervision, through support and providing opportunities to identify strengths and weaknesses, reduces anxiety in supervisees and fosters a better sense of overall performance and ability, consequently having a positive effect on self-efficacy [36]. Supervisors can also significantly enhance self-efficacy by providing feedback on positive behaviors [37].

The pre-intervention ISBAR scores revealed that despite the incorporation of the ISBAR framework into continuing education programs and the hospital's requirement for its implementation, including the design of handover documents consistent with this framework, nurses still did not adhere to it during handover, resulting

in incomplete information transfer. Furthermore, the mean score of communication clarity before the intervention indicated that the quality of communication during handover was inadequate, highlighting the need for effective communication techniques to convey important issues concisely and clearly.

The results of present study demonstrate that the CSM significantly improved nurses' performance in handover. This improvement underscores the model's effectiveness in addressing the gaps identified in pre-intervention practices and enhancing both the adherence to the ISBAR framework and the overall quality of communication during the handover process. The clinical supervision provided not only facilitated adherence to structured communication frameworks but also enhanced nurses' self-efficacy and communication skills, contributing to more effective and safe patient care transitions.

In the first phase of the CSM, a session was held with nurses to discuss not only the importance of handover but also the CSM, its benefits, stages, and the roles of supervisors and supervisees. Rothwell et al. (2021) identified a significant barrier to effective clinical supervision as a lack of understanding of the role and purpose of supervision. In such conditions, supervisees reported anxiety and sometimes perceived supervision as an intrusion into their work, leading to a negative association with the term "clinical supervision" and consequently decreased participation [38].

In the first phase, the ISBAR checklist and communication clarity were also agreed upon for use in implementing the model. Terry et al. (2020) demonstrated that a mutually agreed-upon program between the supervisor and supervisee can serve as a basis for periodic reviews, feedback, and a key indicator of successful clinical supervision [39]. Similarly, Thyness et al. (2022) highlighted that students viewed the use of checklists as a strength in executing clinical supervision due to its role in preventing confusion and increasing orderliness [40].

In the second stage, six clinical supervision sessions were conducted at two-week intervals over a period of three months. Continuous clinical supervision is essential for establishing a positive relationship between the supervisor and the supervisee, and for achieving success in clinical practice [41]. Studies have also highlighted the need for prolonged training in handovers and shift reports to improve communication clarity [18] and self-efficacy [42]. During the supervision sessions, the supervisor provided comprehensive support to the nurses in addressing issues related to handover execution, offered feedback based on their performance, and discussed any deficiencies. A notable advantage of the clinical supervision model is the shared dialogue between the supervisor and the supervisee and the feedback provided, as it facilitates agreement and collaboration, challenges

individuals' ideologies, and enhances both performance [43] and nurses' self-confidence [44].

In the third stage of the clinical supervision model, the MCSS was used to examine the effectiveness of clinical supervision in the intervention group. The scores from the Manchester Scale indicated a high level of effectiveness of the clinical supervision. Snowden et al. also examined the effectiveness of the clinical supervision model among healthcare providers. Participants in their study assessed the model as effective and had a positive perception of its implementation [45].

In the present study, we assessed nurses' communication skills using the ISBAR checklist and communication clarity. The communication skills scores, based on the ISBAR checklist, significantly improved in the intervention group following the implementation of the clinical supervision model. This finding is consistent with the results of the study by Fahim Yegane et al. (2017) [7]. The use of the standard ISBAR framework in handover prevents the omission of critical details and reduces the focus on irrelevant and unnecessary information [46]. Additionally, the communication clarity scores for nurses during handovers also improved in the present study. Uhm et al. (2019) found that using the ISBAR framework and providing feedback to final-year nursing students in real-world settings led to improvements in ISBAR communication and communication clarity [42]. These results align with our findings in the real-world nursing environment. Ikbali et al. (2019) conducted a study to determine the impact of clinical supervision on nurses' performance, showing improvements in knowledge, attitudes, and skills [47]. Similarly, the study by Setiawan et al. demonstrated that implementing the clinical supervision model led to improvements in performance, including technical skills and knowledge [48]. In our study, which lasted for three months, the average scores for ISBAR and communication clarity showed a consistent upward trend over time, and self-efficacy also showed significant changes after three months. This reinforces the strength of the clinical supervision model in creating a supportive environment for addressing individual issues and ensuring adherence to training. Ultimately, improved communication skills can lead to enhanced patient safety, better quality of care, and increased inter-professional collaboration.

Another finding of our study was the improvement in nurses' self-efficacy in handover and general self-efficacy. Self-efficacy refers to self-confidence and a belief in one's ability to perform tasks effectively, which implies ease, reduced anxiety, and a belief in the success of handovers [49]. Our results indicated a significant increase in handover self-efficacy following the implementation of the clinical supervision model. This finding is consistent with a study on nurses where self-efficacy and adherence

to evidence-based handover practices improved after participation in a simulation-based program [50].

In our study, there was a significant difference in the mean general self-efficacy scores between the two groups. This finding aligns with the study by Lohani and Sharma (2023), which examined the impact of clinical supervision on self-awareness and self-efficacy among psychotherapists and counselors [36]. Additionally, Abrishami et al. (2024) found that training based on the ISBAR framework was effective in enhancing patient safety and nurse self-efficacy [16]. Self-efficacy is a crucial aspect of nursing practice and is associated with greater control, motivation, and resilience in challenging situations, such as the COVID-19 pandemic, which can impact patient outcomes and nurse job satisfaction [51]. Incorporating a long-term ISBAR-based handover training program into ongoing nursing education, rather than a single-session program, is essential for the continuous improvement of communication clarity, self-efficacy, safety, and quality of nursing care.

Conclusions

Communication deficiencies and lack of self-confidence are associated with poor information transfer during handovers, which threatens patient safety and care quality. The clinical supervision model offers a flexible opportunity for nurses to gain knowledge and extensively practice communication skills, while also providing emotional support that enhances their self-efficacy. Participants in the clinical supervision model reported high levels of satisfaction, adherence to the ISBAR framework, and improvements in communication clarity and self-efficacy. Therefore, the clinical supervision model is an effective method for training nurses in handovers and transitions.

Limitations

This study had several limitations. Firstly, it was conducted solely with nurses from a single hospital, which may limit the generalizability of the findings. Additionally, rather than randomizing individual participants, entire wards were randomly assigned. However, baseline variables did not differ between the intervention and control groups, and to ensure accuracy, baseline values of dependent variables were considered in statistical analyses. Also, we used a one observer according to the intervention protocol. We suggest that future studies utilize two observers and assess inter-observer reliability.

Implication

These findings underline the importance of clearly defining the roles and expectations of clinical supervision to increase engagement among supervisees. The successful implementation of the ISBAR checklist and the focus on

communication clarity further supported the effective execution of the Clinical Supervision Model, enhancing the overall quality of handover practices.

Acknowledgements

The researchers would like to express their gratitude to the Vice Chancellor for Research of Isfahan University of Medical Sciences for the financial support of this study (project number: 3402282) and all participants.

Author contributions

FGH, SF, and MJT designed the study. FGH, SF, and TMGh collected the study data. MJT, FGH, and SF performed data analysis and interpretation. FGH and SF prepared the manuscript, and all authors read and approved the final manuscript.

Funding

This study was financed by the Vice Chancellor for Research of Isfahan University of Medical Sciences (Project number 3402282).

Data availability

The data supporting the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

Declarations

Ethics approval and consent to participate

This study was approved by the Ethics Committee of Isfahan University of Medical Sciences (IR.MUI.NUREMA.REC.1402.100). All participants were informed about the study's objectives and were assured that their personal information would remain confidential, participation was voluntary, and they could withdraw from the study at any time. All participants signed an informed consent form to participate in the study.

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests.

Author details

¹Student Research Committee, Isfahan University of Medical Sciences, Isfahan, Iran

²Nursing and Midwifery Care Research Center, Department of Adult Health Nursing, Faculty of Nursing and Midwifery, Isfahan University of Medical Sciences, Isfahan, Iran

³Department of Epidemiology and Biostatistics, School of Health, Isfahan University of Medical Sciences, Isfahan, Iran

⁴Nursing and Midwifery Care Research Center, Department of Adult Health Nursing, Faculty of Nursing and Midwifery, Isfahan University of Medical Sciences, Isfahan, Iran

Received: 27 July 2024 / Accepted: 16 September 2024

Published online: 20 September 2024

References

1. Brown-Deveaux D, Kaplan S, Gabbe L, Mansfield L. Transformational Leadership meets innovative strategy: how nurse leaders and clinical nurses redesigned Bedside Handover to improve nursing practice. *Nurse Lead*. 2022;20(3):290–6. <https://doi.org/10.1016/j.nml.2021.10.010>
2. Pakcheshm B, Bagheri I, Kalani Z. The impact of using ISBAR standard checklist on nursing clinical handoff in coronary care units. *Nurs Pract Today*. 2020;7(4):266–74. <https://doi.org/10.18502/npt.v7i4.4036>
3. Thompson JE, Collett LW, Langbart MJ, Purcell NJ, Boyd SM, Yuminaga Y, et al. Using the ISBAR handover tool in junior medical officer handover: a study in an Australian tertiary hospital. *Postgrad Med J*. 2011;87(1027):340–4. <https://doi.org/10.1136/pgmj.2010.105569>

4. Chung JYS, Li WHC, Cheung AT, Ho LLK, Chung JOK. Efficacy of a blended learning programme in enhancing the communication skill competence and self-efficacy of nursing students in conducting clinical handovers: a randomised controlled trial. *BMC Med Educ.* 2022;22(1):275. <https://doi.org/10.1186/s12909-022-03361-3>
5. Chung JYS, Li WHC, Ho LLK, Cheung AT, Chung JOK. Newly graduate nurse perception and experience of clinical handover. *Nurse Educ Today.* 2021;97:104693. <https://doi.org/10.1016/j.nedt.2020.104693>
6. Desmedt M, Ulenaers D, Grosemans J, Hellings J, Bergs J. Clinical handover and handoff in healthcare: a systematic review of systematic reviews. *Int J Qual Health Care.* 2021;33(1):4. <https://doi.org/10.1093/intqhc/mzaa170>
7. Fahim Yegane SA, Shahrami A, Hatamabadi HR, Hosseini-Zijoud SM. Clinical information transfer between EMS Staff and Emergency Medicine assistants during Handover of Trauma patients. *Prehosp Disaster Med.* 2017;32(5):541–7. <https://doi.org/10.1017/S1049023X17006562>
8. Speltri MF, Vaselli M, Baratta S, Lazzarini M, Baroni M, Ripoli A, et al. [Nursing handover: an observational study at the inpatient wards - cardiothoracic department]. *Prof Inform.* 2021;74(4):160–5. <https://doi.org/10.7429/pi.2021.744230>
9. Tran DT, Johnson M. Classifying nursing errors in clinical management within an Australian hospital. *Int Nurs Rev.* 2010;57(4):454–62. <https://doi.org/10.1111/j.1466-7657.2010.00846.x>
10. Lavoie P, Clausen C, Purden M, Emed J, Frunchak V, Clarke SP. Nurses' experience of handoffs on four Canadian medical and surgical units: a shared accountability for knowing and safeguarding the patient. *J Adv Nurs.* 2021;77(10):4156–69. <https://doi.org/10.1111/jan.14997>
11. Sabet Sarvestani R, Moattari M, Nasrabadi AN, Momennasab M, Yektatalab S. Challenges of nursing handover: a qualitative study. *Clin Nurs Res.* 2015;24(3):234–52. <https://doi.org/10.1177/1054773813508134>
12. Croy G, Garvey L, Willetts G, Wheelahan J, Hood K. Anxiety, flipped approach and self-efficacy: exploring nursing student outcomes. *Nurse Educ Today.* 2020;93:104534. <https://doi.org/10.1016/j.nedt.2020.104534>
13. Jun WH. Anger expression, self-efficacy and interpersonal competency of Korean nursing students. *Int Nurs Rev.* 2016;63(4):539–46. <https://doi.org/10.1111/inr.12314>
14. Yada H, Odachi R, Adachi K, Abe H, Yonemoto F, Fujiki T, et al. Validity and reliability of Psychiatric Nurse Self-Efficacy Scales: cross-sectional study. *BMJ Open.* 2022;12(1):e055922. <https://doi.org/10.1136/bmjopen-2021-055922>
15. Takashiki R, Komatsu J, Nowicki M, Moritoki Y, Okazaki M, Ohshima S, et al. Improving performance and self-efficacy of novice nurses using hybrid simulation-based mastery learning. *Jpn J Nurs Sci.* 2022;e12519. <https://doi.org/10.1111/jjns.12519>
16. Abrishami R, Golestani K, Farhang Ranjbar M, Ghasemie Abarghouie MH, Ghadami A. A survey on the effects of patient safety training programs based on SBAR and FMEA techniques on the level of self-efficacy and observance of patient safety culture in Iran hospital, Shiraz in 2022–2023. *J Educ Health Promot.* 2024;13:66. https://doi.org/10.4103/jehp.jehp_194_23
17. Martínez-Fernández MC, Castiñeiras-Martín S, Liébana-Presa C, Fernández-Martínez E, Gomes L, Marques-Sanchez P. SBAR Method for improving well-being in the Internal Medicine Unit: Quasi-experimental Research. *Int J Environ Res Public Health.* 2022;19(24). <https://doi.org/10.3390/ijerph192416813>
18. Yu M, Kang KJ. Effectiveness of a role-play simulation program involving the sbar technique: a quasi-experimental study. *Nurse Educ Today.* 2017;53:41–7. <https://doi.org/10.1016/j.nedt.2017.04.002>
19. Lee Y, Kim H, Oh Y. Effects of Communication skills and Organisational Communication satisfaction on self-efficacy for handoffs among nurses in South Korea. *Healthc (Basel).* 2023;11(24). <https://doi.org/10.3390/healthcare11243125>
20. Moore M, Roberts C, Newbury J, Crossley J. Am I getting an accurate picture: a tool to assess clinical handover in remote settings? *BMC Med Educ.* 2017;17:1–9. <https://doi.org/10.1186/s12909-017-1067-0>
21. Andreasen EM, Høigaard R, Berg H, Steinsbekk A, Haraldstad K. Usability evaluation of the Preoperative ISBAR (Identification, Situation, background, Assessment, and recommendation) Desktop virtual reality application: qualitative observational study. *JMIR Hum Factors.* 2022;9(4):e40400. <https://doi.org/10.2196/40400>
22. Crafoord MT, Fagerdahl AM. Clinical supervision in perioperative nursing education in Sweden - A questionnaire study. *Nurse Educ Pract.* 2017;24:29–33. <https://doi.org/10.1016/j.nepr.2017.03.006>
23. Gonge H, Buus N. Is it possible to strengthen psychiatric nursing staff's clinical supervision? RCT of a meta-supervision intervention. *J Adv Nurs.* 2015;71(4):909–21. <https://doi.org/10.1111/jan.12569>
24. Markey K, Murphy L, O'Donnell C, Turner J, Doody O. Clinical supervision: a panacea for missed care. *J Nurs Manag.* 2020;28(8):2113–7. <https://doi.org/10.1111/jonm.13001>
25. White E, Winstanley J. A randomised controlled trial of clinical supervision: selected findings from a novel Australian attempt to establish the evidence base for causal relationships with quality of care and patient outcomes, as an informed contribution to mental health nursing practice development. *J Res Nurs.* 2010;15(2):151–67. <https://doi.org/10.1177/1744987109357816>
26. Dornan T, Conn R, Monaghan H, Kearney G, Gillespie H, Bennett D. Experience based learning (ExBL): clinical teaching for the twenty-first century. *Med Teach.* 2019;41(10):1098–105. <https://doi.org/10.1080/0142159x.2019.1630730>
27. Yuswanto TJA, Ernawati N, Rajiani I. The effectiveness of clinical supervision model based on proctor theory and interpersonal relationship cycle (PIR-C) toward nurses' performance in improving the quality of nursing care documentation. *Indian J Public Health.* 2018;9(10):562. <https://doi.org/10.5958/0976-5506.2018.01405.5>
28. World Health Organisation (W.H.O). Patient safety curriculum guide: multi professional edition. 2011. http://apps.who.int/iris/bitstream/10665/44641/1/9789241501958_eng.pdf Accessed on 03 Sep 2024.
29. Turner NM, van de Leemput AJ, Draaisma JM, Oosterveld P, ten Cate OT. Validity of the visual analogue scale as an instrument to measure self-efficacy in resuscitation skills. *Med Educ.* 2008;42(5):503–11. <https://doi.org/10.1111/j.1365-2923.2007.02950.x>
30. Sherer M, Maddux JE, Mercandante B, Prentice-Dunn S, Jacobs B, Rogers RW. The self-efficacy scale: construction and validation. *Psychol Rep.* 1982;51(2):663–71. <https://doi.org/10.2466/pr0.1982.51.2.663>
31. Haghayegh A, Ghasemi N, Neshatdoost H, Kajbaf M, Khanbani M. Psychometric properties of Diabetes Management Self-Efficacy Scale (DMSES). *Iran J Endocrinol Metabolism.* 2010;12(2):111–95.
32. Winstanley J. Manchester Clinical Supervision Scale. *Nurs Stand.* 2000;14(19):31–2. <https://doi.org/10.7748/ns.14.19.31.s54>
33. Khani A, Jaafarpour M, Jamshidbeigi Y. Translating and validating the Iranian version of the Manchester Clinical Supervision Scale (MCSS). *J Clin Diagn Res.* 2009;3(2):1402–7.
34. Mokhtari M, Khalifehzadeh-Esfahani A, Mohamadirizi S. The Effect of the Clinical Supervision Model on nurses' performance in Atrial Fibrillation Care. *Iran J Nurs Midwifery Res.* 2022;27(3):216–20. https://doi.org/10.4103/ijnmr.IJNMR_203_20
35. Keshavarzi MH, Azandehi SK, Koohestani HR, Baradaran HR, Hayat AA, Ghorbani AA. Exploration of the role of a clinical supervisor to improve the professional skills of medical students: a content analysis study. *BMC Med Educ.* 2022;22(1):399. <https://doi.org/10.1186/s12909-022-03473-w>
36. Lohani G, Sharma P. Effect of clinical supervision on self-awareness and self-efficacy of psychotherapists and counselors: a systematic review. *Psychol Serv.* 2023;20(2):291–9. <https://doi.org/10.1037/ser0000693>
37. Baylor J. Graduate Student Self-Efficacy during the Psychology Practicum Experience. 2019.
38. Rothwell C, Kehoe A, Farook SF, Illing J. Enablers and barriers to effective clinical supervision in the workplace: a rapid evidence review. *BMJ Open.* 2021;11(9):e052929. <https://doi.org/10.1136/bmjopen-2021-052929>
39. Terry D, Nguyen H, Perkins AJ, Peck B. Supervision in healthcare: a critical review of the role, function and capacity for training. 2020. <https://doi.org/10.13189/ujph.2020.080101>
40. Thyness C, Steinsbekk A, Grimstad H. Learning from clinical supervision—a qualitative study of undergraduate medical students' experiences. *Med Educ Online.* 2022;27(1):2048514. <https://doi.org/10.1080/10872981.2022.2048514>
41. Bourke-Matas E, Maloney S, Jepson M, Bowles K. Evidence-based practice conversations with clinical supervisors during paramedic placements: an exploratory study of students' perceptions. *J Contemp Med Educ.* 2020;10(4):123–30.
42. Uhm JY, Ko Y, Kim S. Implementation of an SBAR communication program based on experiential learning theory in a pediatric nursing practicum: a quasi-experimental study. *Nurse Educ Today.* 2019;80:78–84. <https://doi.org/10.1016/j.nedt.2019.05.034>
43. Dilworth S, Higgins I, Parker V, Kelly B, Turner J. Finding a way forward: a literature review on the current debates around clinical supervision. *Contemp Nurse.* 2013;45(1):22–32. <https://doi.org/10.5172/conu.2013.45.1.22>
44. Awiagah SK, Dordunu R, Hukporti N, Nukunu PE, Dzando G. Barriers and facilitators to Clinical Supervision in Ghana: a scoping review. *SAGE Open Nurs.* 2024;10:23779608241255263. <https://doi.org/10.1177/23779608241255263>

45. Snowdon DA, Sargent M, Williams CM, Maloney S, Caspers K, Taylor NF. Effective clinical supervision of allied health professionals: a mixed methods study. *BMC Health Serv Res.* 2019;20(1):2. <https://doi.org/10.1186/s12913-019-4873-8>
46. Burgess A, van Diggele C, Roberts C, Mellis C. Teaching clinical handover with ISBAR. *BMC Med Educ.* 2020;20(Suppl 2):459. <https://doi.org/10.1186/s12909-020-02285-0>
47. Ikbali RN, Arif Y. The influence of implementation of the clinical supervision team to monitor the performance of the employees in the hospital room of x padang 2015. *Malaysian J Nurs (MJN).* 2019;10(3):9–15. <https://doi.org/10.31674/mjn.2019.v10i03.002>
48. Setiawan A, Keliat BA, Rustina Y, Prasetyo S. The effectiveness of educative, supportive, and administrative cycle (ESA-C) clinical supervision model in improving the performance of public hospital nurses. *KnE Life Sci.* 2019:41–56. <https://doi.org/10.18502/ks.v4i15.5734>
49. Kim JH, Lim JM, Kim EM. Patient handover education programme based on situated learning theory for nursing students in clinical practice. *Int J Nurs Pract.* 2022;28(1):e13005. <https://doi.org/10.1111/ijn.13005>
50. Elgin KW, Poston RD. Optimizing registered nurse Bedside Shift Report: innovative application of Simulation methods. *J Nurses Prof Dev.* 2019;35(2):E6. <https://doi.org/10.1097/nnd.0000000000000526>
51. Magon A, Conte G, Dellafiore F, Arrigoni C, Baroni I, Brera AS, et al. Healthc (Basel). 2023;11(5). <https://doi.org/10.3390/healthcare11050754>. Nursing Profession Self-Efficacy Scale-Version 2: A Stepwise Validation with Three Cross-Sectional Data Collections.

Publisher's note

Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.