

**EFFECTIVENESS OF AN EDUCATIONAL PROGRAM ON IMPROVING NURSE'S
KNOWLEDGE AND PRACTICE REGARDS CLINICAL HANDOVER**

Mawahib Abdelgader Musa Basher^{*1}, Zubaida Abu humida Babiker², Sally Ebrahim Ali³, Azahir Yousif Mohammed⁴, Amna Omer Abd-Alrahman Alrayah⁵

¹Assistant Professor, Al-Manhal Academic, Faculty of Nursing Science, Sudan.

²Assistant Professor of Pediatric Nursing, Nursing Department, College of Health Sciences and Nursing, Al-Rayan Colleges, Al-Madinah Al-Munawarah, Saudi Arabia.

³Assistant Professor of Maternity, Obstetric, and Gynecology Nursing, Nursing Department, College of Health Sciences and Nursing, Al-Rayan Colleges, AlMadinah Al-Munawarah, Saudi Arabia & Ph.D, RN, Egypt.

⁴Associate Professor, Internal Medicine, Shendi University, Sudan.

⁵Assistant Professor, Medical Surgical Nursing, College of Nursing, Shendi University, Sudan.



***Corresponding Author: Mawahib Abdelgader Musa Basher**

Assistant Professor, Al-Manhal Academic, Faculty of Nursing Science, Sudan.

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ABSTRACT

An accurate handover of clinical information is importance to reduce the communication errors, which is linked to continuous and safe care for patients. Training programs should be conducted to avoid the risks related to inappropriate handover. A quasi-experimental study was carried out on a total number of nurses affiliated to Elmek Nimer University Hospital (124 nurses). This study aimed to assess the effectiveness of an educational program on improving nurse's knowledge and practice regards clinical handover. The data was collected using two tools (Structured Questionnaire, and An Observational Checklist ISBAR). Results of the study revealed that the educational program was effective method to improve the level of knowledge and practice among nurses towards clinical handover with statistically significance. It is recommended to conduct educational programs about clinical handover to improve the continuity and quality of patient care.

KEYWORDS: handover, educational program, knowledge, practice.

INTRODUCTION

Clinical handover is defined as transferring responsibility and accountability to another person. An accurate handover of clinical information is importance to reduce the communication errors, which is linked to continuous and safe care for patients. Handovers are an integral part of nursing clinical practice.^[1] Clinical handover is an essential part of patients' care in healthcare settings. An appropriate handover of clinical practices reduces sentinel events and risks for patients through effective communication.^[2] In addition, clinical handover improves care outcome, prevent risks and adverse effects of care, ensure the patient safety, and reduce rehospitalization. Nursing handover may be done three times daily or more frequently as required, so clinical handover is an integral part in nursing practice. During clinical handover, the patient related information should be transferred accurately through effective and standardized criteria.^[3]

To achieve an accurate clinical handover, SBAR model should be followed. SBAR model includes Situation, Background, Assessment, and Recommendation. It helps

to organize the information to be complete, clear, and concise.^[4] Patients should be involved in clinical handover process. Involving patients in clinical handover improves patients' satisfaction, makes them aware of their assigned nurse in each shift per day, enhances patient-centred care, and builds a good relationship with nurses.^[5]

Environmental factors such as medical devices alarms, noise, patient's call alarm may obstacle the effective communication and create barriers to clinical handover.^[6] A previous systematic review study was concluded that lack of communication and relationship between incoming and outgoing nurses is the most barrier of effective clinical handover.^[7] Moreover, it was mentioned that stress and feeling of inadequacy are barriers to effective handover. Training programs regarding criteria and barriers of effective clinical handover improve the level of accuracy and successful implementation of handover among nurses.^[8]

Failures during handoffs contribute to nearly 35% of sentinel events and medical errors. These failures arise

from limited structure during communication interruptions and distractions, lack of training, and communication bottlenecks. These failures have been associated with incorrect or delayed diagnosis and treatment, prolonged morbidity, increased patient length of stay, clinician and patient dissatisfaction, and increased costs.^[9] Nursing handovers should be performed in a standardized way. Clinical handover practices are recognized as being an essential component in the effective transfer of clinical care between health practitioners. In Sudan there is no study conducted recently to shed light on clinical handover in nursing as critical problem required solution. Hence, training programs should be conducted to avoid the risks related inappropriate handover. The current study was developed to improve nurse's knowledge and practice to fill the gap in knowledge and practice by using effective clinical handover and improve quality of care for patients.

RESEARCH METHODOLOGY

Aim of the Study: Assess the effectiveness of an educational program on improving nurse's knowledge and practice regards clinical handover.

Research Hypothesis: Nurses who attend the educational program will improve their knowledges and practices in clinical handover.

Research Design: A quasi-experimental research design was utilized.

Setting: The present study was conducted at Elmek Nimer University Hospital.

Sample: 124 nurses were included in this study. They were selected by total converge sample.

Tools: Data was collected using.

1. Structured Questionnaire: It is composed of three parts. The first part was used to collect data about socio-demographic characteristics including age, gender, qualification, clinical experience, and participation in training about clinical handover. The second part was developed to collect data about the nurse's knowledge about clinical handover. The third part was used to assess the common barriers that affect the application of clinical handover. For each area of knowledge, the scores of the items were summed and calculated into a percent scores. Knowledge was considered good if the percent score was 75.0% or more, fair if the percentage score between 40.0%-75.0%, and poor if the percentage less than 40.0%.

2. An Observational Checklist (ISBAR): It is used for assessing nurses practice about application of clinical handover. It was involved 6 steps (Identification of patient, Situation, Background, Assessment, and Responsibility) to evaluate the performance of nurses at the different steps. The researcher used three grades scale (done correctly, partially done correctly, and not done). For each area of knowledge, the scores of the items were summed and calculated into a percent scores. Knowledge was considered good if the percent score was 75.0% or

more, fair if the percentage score between 40.0%-75.0%, and poor if the percentage less than 40.0%.

Validity and Reliability of Tool

The tool of data collection was reviewed by committee of five expertises in medical and nursing staff at the University of Shendi, Faculty of Medicine and Faculty of Nursing. A pilot study was carried out before starting data collection on 17 nurses, to assess the clarity and applicability of tool and estimate the time needed for data collection. Modifications were carried out. Reliability was tested by Cronbach's alpha (0.77 and 0.87).

Data collection technique

The study was carried out through three phases

I. Pretest assessment: at this phase, the socio-demographic data was collected, knowledge questionnaire was filled in by nurses, and practice in clinical handover was observed. Knowledge and practice were evaluated before the training program.

II. Educational program: at this phase, the training program was conducted including lecture about clinical handover, and poster about clinical handover was distributed.

III. Post-test assessment: this was done after three months during which the nurses for teaching and demonstrating the required skills, using the same tool of pretest assessment.

Statistical Analysis

Results were statistically analysed using SPSS package. Quantitative variables were presented in the form of mean and standard deviation (SD). Statistical significance was considered at p-value <0.05. Data was coded and entered to (SPSS version 22) for analysis. Descriptive measures include frequency and percentage. Chi square test was used to compare quantitative variables. Paired t test for comparison pre and post educational program. P-value is significant at level equal or less than 0.05 and high significant at level less than 0.01.

Ethical Consideration

Ethical clearance was obtained from the research and publication ethical committee of the Shendi University. A permission agreement to conduct the study was obtain from Elmek Nimir University Hospital. Confidentiality was guarantee by storing data and only the researcher was having the data of the participants. Details about the aim and objectives of the study was explained to each participant, verbal consent was obtained, the participants are free to withdraw at any stage without incurring any consequences.

RESULT

Table (1): shows the demographic data of the studied nurses. It was noticed that the highest percentage of them

were less than 25 years old (45.2%). Most of them were females (85.5%). Regarding qualification, about two thirds of nurses had bachelor's degree in nursing. It was observed that, more than half of the studied sample didn't attend any training courses about clinical handover.

Table (2): illustrates the level of knowledge towards clinical handover. There was high statistically

significance differences between level of knowledge pre and post program towards definition (0.000).

Table (3): reveals the level of practice towards clinical handover. There was high statistically significance differences between level of knowledge pre and post program towards definition and background (0.000) and statistical significance in situation (0.025). While there was no significance in assessment and responsibility (0.086 & 0.103) respectively.

Table (1): Distribution of the studied nurses according to their demographic characteristics (N=124).

Items	Frequency	Percent
Age		
<25 year	56	45.2%
25-30 year	46	37.1%
31-35 year	9	7.3%
36-40 year	12	9.7%
>40 year	1	.8%
Gender		
Female	106	85.5%
Male	18	14.5%
Qualification		
Diploma	35	28.2%
Bachelor	79	63.7%
Postgraduate	10	8.1%
Previous training courses		
Local	39	31.5%
National	9	7.3%
International	6	4.8%
No	70	56.5%

Table (2): Distribution of the study group according to their knowledge about clinical handover pre and post program (N=124).

Knowledge regarding clinical handover	Level of knowledge	Pre-program		Post-program		p-value
		Frequency	Percent	Frequency	Percent	
Definition.	Good	11	8.9%	81	65.3%	0.000**
	Fair	5	4%	37	29.8%	
	Poor	108	87.1%	6	4.8%	
Types.	Good	14	11.3%	97	78.2%	0.000**
	Fair	8	6.5%	19	15.3%	
	Poor	102	82.3%	8	6.5%	
Situation.	Good	15	12.1%	96	77.4%	0.000**
	Fair	9	7.3%	18	14.5%	
	Poor	100	80.6%	10	8.1%	
Handover responsibility.	Good	20	16.1%	100	80.6%	0.000**
	Fair	9	7.3%	15	12.1%	
	Poor	95	76.6%	9	7.3%	
Handover conducted.	Good	4	3.2%	85	68.5%	0.000**
	Fair	4	3.2%	24	19.4%	
	Poor	116	93.5%	15	12.1%	
Benefit of handover.	Good	12	9.7%	107	86.3%	0.000**
	Fair	13	10.5%	11	8.9%	
	Poor	99	79.8%	6	4.8%	
Information conducted in handover.	Good	15	12.1%	106	85.5%	0.000**
	Fair	16	12.9%	14	11.3%	
	Poor	93	75%	4	3.2%	
Duration of handover.	15-30 minute	62	50%	98	79.0%	0.000**

	30-45 minute	50	40.3%	22	17.7%	
	45-60 minute	11	8.9%	0	0.0%	
	Above 60 minute	1	0.8%	4	3.2%	

Table (3): Distribution of the study group according to their practice about clinical handover pre and post program (N=124).

Items	Level of performance	Pre-program		Post-program		p-value
		Frequency	Percent	Frequency	Percent	
Identification	Done	4	13.3	20	66.7%	0.000**
	Partially done	26	86.7	10	33.3%	
	Not done	0	0.0	0	0.0%	
Situation	Done	10	33.3	21	70.0%	0.025*
	Partially done	14	46.7	5	16.7%	
	Not done	6	20.0	4	13.3%	
Background	Done	1	3.3	7	23.3%	0.000**
	Partially done	6	20.0	14	46.7%	
	Not done	23	76.7	9	30.0%	
Assessment	Done	4	13.3	12	40.0%	0.086
	Partially done	13	43.3	8	26.7%	
	Not done	13	43.3	10	33.3%	
Responsibility	Done	6	20.0	8	26.7%	0.103
	Partially done	14	46.7	18	60.0%	
	Not done	10	33.3	4	13.3%	

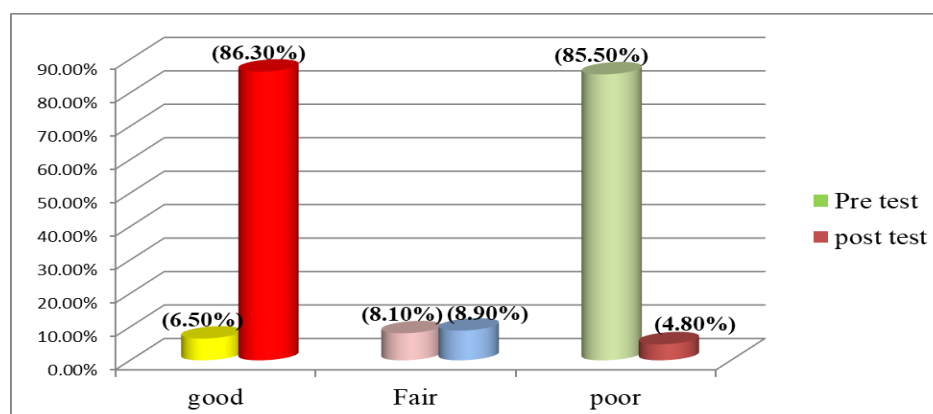


Figure (1): Distribution of the study group according to their knowledge about barriers of clinical handover pre and post program (N=124).

DISCUSSION

An accurate handover of clinical information is important for continuity and safety of care. The result of the present study revealed that there were highly statistically significances between pretest and post-test level of knowledge regarding definition, types, situation, responsibility, handover conduction, benefit, and duration of handover (p-value= 0.000). Concerning level of practice in handover, it was noticed that there were highly statistically significances between pretest and post-test results in identification and background (p-value= 0.000), and statistically significance in situation (p-value= 0.025). On the other hand, there were no statistical significances between pretest and post-test results in assessment and responsibility (p= 0.086 & 0.103) respectively.

These findings agree with previous study done in Korea which found a significant increase in knowledge level after simulation-based training program.^[10] Moreover, these findings are like a study conducted by Ruhomaulu et al. who assessed the effect of implementing teaching session about SBAR on handover among nurses, they noticed 54.4% improvement in using SBAR method in clinical handover.^[11]

In addition, the findings of the present study in consistent with a previous study carried out in Western Australia which reported that (55.0% of the studied sample had very or highly effective handover practice. A significant difference was found between health professions in perceived effectiveness in the conduct of their own handovers (p < 0.01).^[12] Also, the findings of this study are in harmony with a previous study done in Egypt, which illustrated a significant difference between pre and

post educational session regarding agreement, patient information, handover time, and nursing hand off ($p < 0.05$), and the studied sample had been improved in the post test with highly significant ($p = 0.000$).^[13]

In addition, Alexandra Buckley reported that there was improvement in the level of knowledge regarding proper time, and handover application after conducting an educational session with a high statistically significance ($p = 0.000$). It was noticed that patient identification practice had been improved in the post test with highly significant result ($p = 0.000$). This result are corresponding with a previous study done in Iran which shown that the frequency of information provided in clinical handoff in the domain of the patient's identity were increased from 86.9% to 100.0% with a high statistically significant difference ($p < 0.001$).^[14]

It was observed that performance of situation had been improved in the post test with a statistically significance ($p = 0.025$). This result is going in the same line with a previous study carried out in Iran, which revealed that the domain of the current situation, and the information provided in handoffs increased from (75.1% to 94%9) with a highly statistically significance ($P < 0.001$).^[14] Concerning the domain of background, it was observed that the level of practice was improved after conducting the educational program with highly significant ($p = 0.000$). This result is matched with a previous study done in Egypt which shown a statistically significant difference ($p < 0.05$) between both studied groups regarding hand off interventions and nurse perceptions of handoff quality and impact on patient care.^[13]

CONCLUSION

Handover is a dynamic process, and it has direct impacts on patient care. Improving nurse's knowledge and practice are essential to enhance the implementation of patient handover. The educational program was effective method in increasing knowledge, improving practice and performance of nurses towards clinical handover. Continuing education for nurses is recommended.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interests.

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