



## **Effectiveness of a training program to improve nurses' knowledge and performance regarding shift report handover**

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### **Abstract**

**Background:** Handover is known to be a danger point in the patient care process for a long time. Ineffective communication during handover is one of the most common identified cause of catastrophic or sentinel events in hospitals.

**Aims:** To assess the knowledge and performance of nurses' related to shift report handover then, developing and implementing in-service training program for improving knowledge and performance of nurses' related to shift report handover.

**Study design:** A quasi-experimental design was used to carry out the study.

**Setting:** This study was conducted in the Cardiac and Digestive System Center at Sohag City which affiliated to Ministry of Health.

**Subject:** The study included (45) nurses'.

**Tools:** Two tools of data collection were used namely; first tool a structured questionnaire consisted of two main parts: Part 1 included questions about personal characteristics of the nurses', Part 2 knowledge regarding shift report handover questionnaire; and second tool an observational checklist repeated 3 times pre, post and after three month follow up.

**Results:** Majority of nurses had very poor total knowledge regarding shift report handover pre program phase reached 100% in post and follow up phase of program implementation and none of them have low performance in pre phase which increase to 100% in post and follow up phase of program implementation.

**Conclusion:** Nurses have poor knowledge and low performance of shift report handover before implementation of the training program. Improving their knowledge and performance post program implementation. There were significant positive correlation between knowledge score and performance score in pretest training program.

**Recommendations:** Hospital should using a Health information system to facilitate and help nurses' to document patients' data. Developing and implementing continues educational program for nurses' that will increase their professionalism in documentation. The applicability of shift report handover should be supported from the hospitals administration.

**Keywords:** Communication, Documentation, Knowledge, Nurses, Performance, Shift Report Handover

### **Introduction**

Effective communication between nurses and patients is central element of care. The nurse-patient communication regarded as the essence and root to the nursing science and practice. Effective communication is helping patients facing their stress, enhancing utilizing of coping strategies, and improve clinical outcome. Communication is central to the provision of safe, high quality medical care. However, the increasingly complex healthcare environment can complicate the communication process and hinder information exchanges that are necessary for optimum care. Communication is an important and integral part of life, without which no one might survive. Verbal and non-verbal communication starts from birth and does not end until death (Sharour, 2019) [28].

Communication is a process that involves written, verbal, or

nonverbal interactions between two persons or within a group (Thomas, 2018) [35]. Effective communication required the existence of a good relationship between the clinical staff, particularly the nurse, the patients, and their families. Moreover, Communication is a human, interactive process that sends some meaning, information, message, emotions, and/or beliefs from one human being to another person or to a group of people. Connectedness and interrelationships between and among human beings occur because communication occurs. Communication is a process by which people exchange ideas, facts, feelings or impressions in ways that each gains a 'common understanding' of meaning, intent and use of a message (Fleischer, *et al.*, 2019) [13].

Effective communication, cooperation, and teamwork among members of a healthcare team are of utmost

importance. In this regard, it is necessary to ensure that this communication facilitates the transfer of care information among healthcare providers and increases patient safety and care quality. Effective information transfer in the health care system is a vital component of safe patient care and one of the top five priorities for improvements in patient safety worldwide. Therefore, information must be complete, precise, exclusive, relevant, and timely (Samira, & Marzieh, 2019) [29].

Communication is the basic element of human interactions that allows people to establish, maintain and improve contacts with others. Nurses have an important role in the care of clients/patients in a variety of healthcare settings. Therefore, every point of contact can be an opportunity to improve client/patient care and relationships using effective communication. The quality of care provided is dependent on the quality of communication that exists between the nurses and their client/patients. When nurses communicate effectively with interest, listen actively and demonstrate compassion, clients/patients may be more likely to report their experiences as positive, even at times of distress and ill health. The clients who understand details of their illness and treatment (Frances, *et al.*, 2018) [14].

Communication and documentation is defined as the verbal and nonverbal interactions between the nurse and the client, the client's significant others and other members of the health care team. Events and activities associated with client care are recorded and documented in written and/or electronic records that demonstrate adherence to the standards of practice and accountability in the provision of care. This documentation is a form of written communication (Tasew, *et al.*, 2019) [34].

Nursing documentation is an important aspect of safe and ethical nursing care. Documentation of care is one of the professional responsibilities of nurses and is associated with their accountability in the healthcare system. Nursing documentation is a written evidence of interactions between and among health professionals, clients, their families, and health care organizations. Since the era of Florence Nightingale, documentation has been a critical and fundamental part of nursing practice. Nursing activities now is not only limited to taking physicians orders or activities related to patient promotion but also documenting the care given. Documenting nursing care is inclusive of nursing assessment, nursing care plan, which highlights the healthcare needs and outcomes, along with interventions and discharge advice notes (McCarthy, *et al.*, 2019) [22].

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Effective interpersonal communication skills between health care providers and client/patients are one of the most significant factors for improving client/patients' satisfaction, compliance and overall health outcome. It is essential that nurses develop and maintain an understanding of the methods and skills of communication in order to meet the needs of the client/patient. Communication is the basic element of human interactions that allows people to establish, maintain and improve contacts with others.

Effective interpersonal communication skills between health care providers and client/patients are one of the most significant factors for improving client/patients' satisfaction,

compliance and overall health outcome. It is essential that nurses develop and maintain an understanding of the methods and skills of communication in order to meet the needs of the client/patient. Accurate documentation and reports play a pivotal role in health services. This documentation is necessary to identify nursing interventions that have been provided to patients and to show patient progress during hospitalization. It is also an indicator of nurse performance and the nursing service quality in a hospital. Documentation provides details of patient condition, nursing interventions that have been provided, and patient response to the interventions (Asmirajanti, *et al.*, 2019) [1].

Communication in nursing is an essential part of a nurse's responsibility to efficiently and safely manage patients. An important type of communication that nurses and other health professionals engage in is handover communication. Handover is crucial for planning patient care, patient evaluation, and patient management. Handover communication is a patient safety priority (Richter, *et al.*, 2016) [26]. A handover report is one of many ways nurses can effectively communicate with the healthcare team. The handover report is the exchange of patient information and the transfer of responsibility of care from one nurse to another (Bigani, & Correia, 2018) [6].

Handover shift report is the information exchange between the outgoing nurse and the oncoming nurse at the patient's bedside. Handoff at the patient's bedside provides equal level conversation between the outgoing nurse and the oncoming nurse and offers an opportunity to ask questions that verify the information accuracy as the oncoming nurse assumes ownership of the patient's care (Groves, *et al.*, 2016) [15].

According to the Agency for Healthcare Research and Quality [AHRQ], (2019) [4] patients need to be continually updated on their plan of care through nursing bedside reporting. It is important to include the patient in healthcare discussions from the beginning of hospitalization, so they are an active participant in their plan of care. Handover is a dangerous time for patients. Poor communication during handover is widely thought to contribute to poorer patient outcomes. Handover presents a high risk for patient safety, with potentially life-threatening consequences (Mannix, *et al.*, 2017) [23].

On a patient care unit handover report occurs two to three times a day depending on the staffing schedules of 8 or 12 hour shifts. During this time "essential patient information" is transferred to the next shift for the continuation of consistent and safe patient care. Miscommunication is responsible for patient harm in more than 80% of medical malpractice lawsuits (Vines, *et al.*, 2014) [36]. Zou, and Zhang, (2016) [37]. Agency for Healthcare Research and Quality, (AHRQ) (2013) [5] noted that communication breakdown is connected to 70% of patient adverse events (Rogers, 2017) [25].

### Significance of the Study

Effective communication between nurses and healthcare providers is essential in the delivery of safe patient care. According to Joint Commission on Accreditation of Health Organization, [JCAHO], (2012, 2017) [18, 19] approximately 80% of medical errors are credited to ineffective

communication. A bedside report is one of many ways nurses can effectively communicate with the healthcare team.

Also recommended that intradepartmental reports must be defined and accessible to all nursing personnel, with special emphasis on the handover procedures. The author stressed on the importance of training and re-training to refresh nurses' knowledge and practice related to intradepartmental reports.

As the researcher done the Master thesis which titled by "patient safety: Assessing nursing performance during shift handover " and found that the majority of staff nurses had low knowledge regarding shift report hand over which lead to low performance regarding documentation of shift report, and recommended that, conducting training program for nurses about shift hand over. So for completion of this work the researcher decided to conduct this research.

### **Aim of Study**

The main aim of this study is to assess knowledge and performance of nurses' related to shift report handover then, developing and implementing in-service training program for improving knowledge and performance of nurses related to shift report handover.

1. Assessment of the knowledge and performance of nurses' related to shift report handover.
2. Planning then designing and developing of in-service training program for nurses based on needs assessments related to shift report handover.
3. Implementation and evaluation of the program effectiveness and its impacts on nurses' performance.

### **Subject and method**

**The study was portrayed according to the four following designs:** Technical design, Administrative design, Operational design and Statistical design.

#### **1. Technical design**

This design was involved the study design, setting, subject, and data collection tools.

**Research design:** A quasi- experimental design was used to carry out the study.

**Setting:** This study was conducted in the Cardiac and Digestive System Center at Sohag City which affiliated to Ministry of Health (MOH). The bed capacity of this center is 108 beds.

**Subject:** The subjects of this study included all nurses' who assigned to work in aforementioned settings during the data collection period with total number (45) nurses'.

#### **Tools of data collection**

The tools of this study included the following

1. Tool for assessment phase a structured questionnaire consisted of two main parts

**Part (1):** This part aimed to collecting data related to the personal characteristics included nurses'. It covered items as age, gender, marital status, educational qualification, years of experience, and attended training programs.

**Part (2):** knowledge shift report handover questionnaire sheet which adopted from Abdel-Aal, (2016)<sup>[2]</sup>. It consisted of twenty six closed ended questions regarding shift report

handover, and multiple choice questions categorized into two main dimensions: Communication (11) items and Shift report handover (15) items repeated 3 times pre, post and after three month follow up.

**Scoring system:** For each knowledge question, a score "1" was given for a correct answer and "0" for the incorrect one. The total knowledge score was calculated by summing-up the scores of the 26 questions for a maximum score of 26. Mean and standard deviation was calculated according to the following (Good if scores 19-26 Score percent >75%, Average Scores 15-18 Score percent 60-75% and Poor Scores<14 Score percent <60%).

### **2. Observational checklist**

An observation checklist adopted from Abdel-Aal, (2016)<sup>[2]</sup>. In order to collect data related to the actual performance of nurses during the shift report handover procedure. This tool was consisted of (43) items. These items were divided into three main dimensions. First dimension preparation of pre-report hand-over consists of 5 items (writing shift's report, ensuring that the information for each patient is complete, etc.), second dimension criteria of handover process consists of 10 items (conduct oral shift report at time, exchange the contents of report at patient's bed, Face to face interaction, etc.) and third dimension Exchange contents of shift report includes: A-Patient's information 5 items (Patient full name, Patient's age, etc.), B-Patients health status 3 items (Date of admission, Patients diagnosis, etc.), C-Procedures done to the patients 13 items (Patient's vital sings, Patient medication intake, patient's level of awareness, etc.) and D-New physician instructions 7 items (new medication instructions, changes in the diet, etc.).

**Scoring system:** The results of observation checklist categorized either "done" or "not done". These were respectively scored 1 and zero. The scores of the items of each part were summed up and the total divided by the number of items, giving a mean score for the part. Total score of nurses' performance during shift handover considered "high" if the total score was 75% or more, "moderate" if the total score was from 60% to less than 75% and "low" if less than 60%.

#### **1. Developing and implementing the program**

**A) General objective:** The main objective for implementing this program to improve nurses' at intensive care unit and inpatient department in Cardiac and Digestive System Center with knowledge and skills of shift report handover.

**B) Specific objectives:** The end of this program the nurses' will be able to: Define effective communication in nursing. Enumerate the importance of effective communication in nursing. Enumerate the elements of communication process. Classify barriers of communication. Apply steps of communication skills in work. Define nursing documentation. Mention the principles of nursing documentation. Discuss the purposes of nursing documentation. List errors of nursing documentation. Define the nursing report. Classify different types of nursing report. Discuss the importance of nursing report. Mention characteristic of good report. Define shift report handover. Discuss the

importance of shift report handover. Discuss the component of shift report handover. Discuss the procedure of written shift report handover. List the importance of using hospital report. Discuss the components of hospital report. Define incidence report. Discuss the purposes of incidence report. Define nursing record. Enumerate importance of nursing record and list different types of nursing record.

## **2. Opinionative sheet for observation of the program**

An opinionative form was developed by the researcher in order to evaluate the value of the program from study participants' point of view. It covers (7) questions related to participants opinion as regards to content of the training program, (9) questions related to the skills of the trainer, and (6) questions related to Implementation of the training program. Responses were scored based on 5 points Likert scale ranging from (5) excellent, (4) very good, (3) good, (2) pass and (1) poor.

## **II. Operational design**

This design explains the actual steps of implementation of the in service training program, including the pilot and the field work.

### **Pilot study**

Pilot study was conducted to assess clarity and feasibility of the questionnaire and to detect the obstacles and problems that may be encountered during data collection. It was done on four nurses' representing 10% who are included in the total study sample. Questionnaire sheet was distributed to them and time consumed was calculated for filling the questionnaire, it was ranged from 20 - 30 minutes. The time consumed to complete observation checklist sheet was 20-25 minutes.

Assessment of actual nurses' performance during shift report handover by using observation checklist tool. The observation was done during morning and night shift because the exchange of shifts done 2 times daily at intensive care units and inpatient department in Cardiac and Digestive System Center at Sohag City, the observation was taken within 20-25 min for each nurse. The researcher observed from 2 to 3 nurses' every day two times weakly. The observation was done three times during the study; the first observation was from April 2019 to beginning of May 2019 before implementation of the program, second observation immediately after implementation of the program was from last of May 2019 to beginning Jun 2019, third observation in August/ 2019.

The researcher develops a training program through four stages (Assessment, Planning, Implementation and evaluation).

### **Field work**

Assessing the knowledge and skills needs of nurses' about inter shift report handover. After ensuring the clarity of the tools, the actual data collection of the study was carried out from April 2019 to Augustus 2019.

### **Program planning phase**

The program was planned and designed based on literatures review from text book, articles, magazine in addition to

assessment of educational needs of the study subject.

### **Planning and developing in-service education program**

**Teaching strategies and aids:** The methods of teaching and instructional media that were used by the researcher were lectures, small group discussions, brain storming, role play, data show, flip charts, videos, presentations and handouts were provided to all participants as a teaching aids.

### **Teaching place**

The program was conducted in the lecture hall in Cardiac and Digestive System Center at Sohag City.

### **Program implementation phase**

The program was implemented by the researchers on all nurses' working in intensive care units and inpatient department in the center (n=45).

The program was implemented during May 2019 were divided nurses into two groups first group contains (23) and second group contains (22), through two weeks, one week for each group during three days every week. The time allowed for achieving the program was 15 hours for each group per week. The program session started from 8.30 am to 2:00 pm every day. The program sessions were about shift report handover, communication, documentation, reporting and recording. In the first session the researcher explained the aim of the study, program aim, objectives, content outline and pre-test. At the beginning of each session an orientation to training and its aims took place. Daily verbal informal feedback was done at the beginning of each session.

Teaching methods used during the program implementation included lecture, discussions, and practice included role play and group activities to apply shift report handover oral and written. Also educational media used during the program was data show, flip chart and whiteboard. Handouts were distributed as appropriate to the nurses. Post test was done after the program implementation using knowledge questionnaire sheet immediately after end the program, also assessment of performance of staff nurses was done by using observational checklist at the beginning of 15 of May 2019 to end of May 2019.

### **Follow up phase**

After three months of implementation the program at the beginning of Augusts 2019 to the end of Augusts 2019, the researcher evaluate the effect of the program on staff nurses knowledge and performance regarding shift report handover.

### **Administrative Design**

Official permissions to conduct the study were obtained from pertinent authorities. The researcher met with the Cardiac and Digestive System Center director and explained to him the purpose of the study and the methods of data collection to obtain their permission to conduct the study.

### **Ethical considerations**

The study protocol was approved by Ethics Committee of the Faculty of Nursing, Assuit University. The aim of the study was explained to officials as well as to all study participants. The participants were reassured that any

obtained information would be confidential, and used only for the purpose of research. The study maneuvers had no actual or potential harms on participants. The study beneficence was clear in the improvement of performance of nurses, which would be reflected positively on their settings.

**Statistical Design:** Collected data were verified prior to

## Results

**Table 1:** Percentage distribution of personal characteristics of the nurses' participated in training program regarding shift report handover (n=45)

personal characteristics	No. (45)	%
<b>Age: (years)</b>		
< 25	34	75.6
≥ 25	11	24.4
Mean ± SD (Range)	23.98±2.22 (21.0-32.0)	
<b>Educational qualification</b>		
Bachelor of Nursing science	6	13.3
Technical Health Institute (Nursing branch)	39	86.7
<b>Years of experience</b>		
1 – 2	32	71.1
3 or more	13	28.9
Mean ± SD (Range)	2.49 ± 1.58 (1.0 – 7.0)	
<b>Marital status</b>		
Single	31	68.9
Married	14	31.1
<b>Attending training program</b>		
Yes	6	13.3
No	39	86.7

**Table 2:** Total mean score of nurses' knowledge regarding shift report handover through three phases of the training program

Items	Pre-test (n= 45)	Post-test (n= 45)	Follow-up (n= 45)	P-value <sup>1</sup>	P-value <sup>2</sup>
	Mean ± SD	Mean ± SD	Mean ± SD		
Knowledge about communication	2.09 ± 2.32	10.49 ± 0.76	9.56 ± 1.10	0.000*	0.000*
Knowledge about reporting	2.93 ± 1.74	14.13 ± 0.73	12.67 ± 1.17	0.000*	0.000*
Total score of knowledge	5.02 ± 3.76	24.62 ± 1.01	22.22 ± 1.36	0.000*	0.000*

(\*) statistically significant (p< 0.05)

**Table 3:** Total mean score of nurses' performance regarding shift report handover through three phases of the training program

Items	Pre program (n= 45)	Post program (n= 45)	Follow up (n= 45)	P-value <sup>1</sup>	P-value <sup>2</sup>
	Mean ± SD	Mean ± SD	Mean ± SD		
Preparation of pre report handover	1.04 ± 1.35	4.82 ± 0.39	4.38 ± 0.78	0.000*	0.000*
Criteria of handover process	2.87 ± 1.58	9.42 ± 0.69	8.91 ± 1.06	0.000*	0.000*
Exchange contents of shift report	6.00 ± 5.79	25.38 ± 4.05	23.76 ± 4.58	0.000*	0.000*
a) Patient's information	0.84 ± 1.13	4.60 ± 0.65	4.33 ± 0.80	0.000*	0.000*
b) Patients health status	0.71 ± 0.87	2.89 ± 0.32	2.51 ± 0.59	0.000*	0.000*
c) Procedures done to the patients	2.87 ± 2.94	11.69 ± 2.55	11.00 ± 2.32	0.000*	0.000*
d) New physician instructions	1.58 ± 2.04	6.20 ± 1.29	5.91 ± 1.59	0.000*	0.000*
Total score of performance	9.91 ± 7.94	39.62 ± 4.47	37.04 ± 5.51	0.000*	0.000*

(\*) statistically significant (p< 0.05)

**Table 4:** Correlation between nurses' knowledge and their performance regarding shift report handover

Items	R-Value	P-value
Pre- program	0.665	0.000*
Post- program	0.099	0.518
Follow-up	0.111	0.470

**Table (1):** Demonstrates that the majority of the nurses' are aged less than twenty five years, females, have less than five years of experience (75.6%, 88.9%, 71.1%) respectively.

computerized data entry analysis by using Statistical Software Package for Social Sciences (SPSS) version 20 program. Data were presented using descriptive statistical in the form of percentages also mean and standard deviations were calculated. For relation between variables (chi – square), (Correlation r-test) and (ANOVA test) were used statistical significant was considered at p- value ≤0.05.

while, the majority of the studied staff nurses have a technical Health Institute Diploma (Nursing branch), and not attending any training programs (86.7% & 86.7%) respectively, as well as two third of the studied staff nurses are single (68.9%).

**Table (2):** Shows that the total mean score of nurses' knowledge in pre program phase is very low (5.02±3.76) mean while immediately post and follow up program phase are satisfactory (24.62±1.01, 22.22±1.36). There are statistical significance differences found between staff

nurses' knowledge in pre, post and follow up as regard to the all training program phases regarding shift report handover ( $p= 0.000^*$ ).

**Table (3):** Demonstrates that total mean score of nurses' performance before implementation of the program phase is low ( $9.91 \pm 7.94$ ), while immediately and follow -up of the program phases improvements of staff nurses performance are satisfactory ( $39.62 \pm 4.47$  &  $37.04 \pm 5.51$ ). There are statistical significance differences between staff nurses' performance in pre, post and follow up as regard to the all shift report handover training program items ( $p= 0.000^*$ ).

**Table (4):** Shows that there are significant positive correlation between knowledge and performance in pre training program implementation phase. Meanwhile no significant correlation between knowledge and performance in post and follow-up phases of training program.

### Discussion

The present study revealed that all nurses' have low knowledge about shift report handover ( definition of report, criteria for good report, goal of the shift handover, introductory information of shift handover, etc.) in pretest at the beginning of the program implementation while there were statistical significant improvement of knowledge regarding shift report handover after program implementation especially in items: types of nursing report about patients care in the department, the criteria for good report and the information about shift handover elements. From the point of view of the researcher this result may be due to didn't the custom do to shift report handover as a part of routine work and they not attending program about importance of inter shift report.

This congruent with Khalaf, (2015) <sup>[21]</sup> who state that the nurses had deficient knowledge of shift report before training. This was noticed in most of the knowledge areas tested and improved after training. Also, in the same line Elsayed, (2013) <sup>[12]</sup> reported that the majority of nurses not aware of concept of shift report before the program and there was statistical significant increase in level of knowledge regarding shift report concept in post program implementation.

Jefferies, *et al.*, (2012) <sup>[20]</sup> mentioned that the aim of the handover process is to achieve effective, safe, and high quality communication when the responsibility for the patient's care is transferred from one nurse to another. Unfortunately, it is becoming increasingly apparent that a breakdown in communication system, in hospitals, compromises the patient safety. Ernst, *et al.*, (2018) <sup>[11]</sup> reported that an effective clinical handover can reduce the risk of communication failures between healthcare clinicians.

As regard nurses' knowledge about the process of exchanging of shift report handover, the current study findings showed that all staff nurses' knowledge were very deficient about the process of exchanging shift report handover which includes; the person who write shift's handover, the place of writing shift's handover, Time of shift handover affairs the criteria required for the place of exchanging the shift handover, etc. before program implementation. This result is due to the lack of a correct system in the hospital to deliver of the shift report handover among nurses.

These results agreement with Khalaf, (2015) <sup>[21]</sup> who clarified that before the training, very few of staff nurses had satisfactory total knowledge of shift report. The deficiencies were particularly evident regarding the aim, elements, and characteristics of shift report, and of its introductory information. In this respect, Elsayed, (2013) <sup>[12]</sup> reported that the majority of nurses not aware of the element of the process of shift report before the program and there was statistical significant increase in the level of knowledge post implementation of the program. Also, in the same line Ibrahim, (2014) <sup>[17]</sup> stressed that the guidelines to be followed during bedside shift report by staff nurses should be well known and followed by them.

Chung, (2011) and Jefferies, *et al.*, (2012) <sup>[10, 20]</sup> recommended that using evidence based shift report tool to improve nurses' communication and initiative outcomes showed decreased frequency of missed information. Therefore, adverse events can be reduced if complete and accurate information of the patient's condition, care, and response to care are available to all health care members through informative and meaningful communication.

Regarding observation of performance of nurses' about preparation pre-report handover, the present study revealed that majority of studied staff nurses had inadequate performance in items which include (writing shift's report, reviewing the contents of the report for each patient, ensuring that the information for each patient is complete, etc.). The only high score of performance is related to preparing all files and placing on patient bed before implementation of the program. This result could be related to their lack of knowledge about the importance of preparation pre-report handover and there were improvement of performance related to all items after implementation of the program. This improvement has also continued throughout the follow-up phase.

This result agreed with Abdel Aal, (2016) <sup>[2]</sup> who found that all nurses' had inadequate performance about writing shift's report and preparing all patients files and placing it in the hand-over place. On the same line Khalaf, (2015) <sup>[21]</sup> clarified that the staff nurses' performance of shift report was deficient before implementation of the evaluative feedback training. Moreover, Elsayed, (2013) <sup>[12]</sup> reported that half of staff nurses write shift report, review, complete or make sure that all data is presented before carrying out the program.

Berkenstadt, *et al.* (2008) and Halm, (2013) <sup>[8, 16]</sup> clarified that handover communication must include current patient information regarding status and care, treatment and service and any changes in patient condition both recent and historical. The handover process should be interactive with an active discussion among the healthcare professionals or nursing staff involved in the handover.

Before the program implementation the current study result revealed that performance of nurses' about criteria of handover process were generally low at all items which include; conduct oral shift report at time, face to face interaction, answer the questions to the oncoming nurse if needed use understandable words, etc. From point of view of researcher this result may be due to many reasons as on coming nurses' lateness, lack of time management and lack of awareness about importance of handover criteria. This result is congruent with Elsayed, (2013) <sup>[12]</sup> found that,

handover process was generally very low before the program implementation; the majority of studied nurses did not conduct oral report at time. According to Riesenber, (2012) [27] emphasis that the value of face to face patient's handover that offering the chance and the ability to ask questions between the sender and the receiver.

Moreover, before implementation of the program the study showed that majority of nurses' not exchange the contents of report at patient's bedside. After implementation of the program, staff nurses' performance about exchange the contents of report at patient's bedside significantly improved. This improvement has also continued throughout the follow-up phase of the study, although with minimal declines. This result is congruent with found that none of staff nurses perform shift report exchange contents at patient bed. On the same line Abdel Aal, (2016) [2] who clarified that about two thirds of study subjects had inadequate performance in the shift report handover is done close to the patient.

Baker, (2010) [7] emphasis that bedside report is an excellent approach to respond to a number of the Joint Commission's National Patient Safety Goals. With the change in practice, nurse will have the opportunity to verify the report provided by visualizing the patient on the spot. In addition, the oncoming nurse can complete a baseline assessment on a patient as the report is being given. Immediate or early assessment will enable the nurse to plan and prioritize the tasks required to complete patient's care for the shift. Moreover, the bedside handover process was a life-saving intervention. A literature search found that bedside shift report (BSR) practice permitted the outgoing nurse to provide life-saving information about the patient to the oncoming nurse. Sadule-Rios, *et al.*, (2017) [30].

According to the present study findings, all nurses' not used standardized abbreviation and terminology during exchange of shift report handover before the program implementation. From point of view of the researcher this result may be due to that nobody cares about using it and is not used in different department. While there were statistical significant improvement after the program. This has also continued throughout the follow-up phase. This result congruent with Elsayed, (2013) [12] who found that the majority of staff nurses not used the authorized abbreviations.

Regarding nurses' performance about exchange patients' health status the present study revealed that the majority of staff nurses' have inadequate performance at all items which include date of admission, patients' diagnosis and patients complains before implementation of the program. These results could be related to lack of nurses' awareness about importance of exchanging all patients' information. While improvement of performance related to all items after implementation of the program and also continued throughout the follow-up phase. This study finding is congruent with Khalaf, (2015) [21] who clarify that the staff nurses' performance of patient health status and diagnosis was deficient before implementation of the evaluative feedback training.

The findings of the present study shows that the majority of nurses' had inadequate performance at all items about exchange procedures done to the patients during the shift report handover which include; patient's vital signs, patient medication intake, patient's level of awareness, total fluid

intake and output, blood transfusion if needed, patient's allergy to any food / drug, determining the skin condition, determining the risk of falling, determine state of wound if present, The current pain level, etc. before implementation of the program while there are improvement performance related to all items after implementation of the program and continued throughout the follow-up phase. This result consistent with Abdel Aal, (2016) [2] who found that majority of the study subjects had inadequate performance for exchanging the patient vital signs, inquiring about allergy to any medication/ food, determining the skin condition and determining the patient level of conscious. Sand-Jecklin, & Sherman, (2014) [31] emphasis that the bedside component must be added to report include the discussion of plan of care, visualization of patient incisions, drains, lines, pain assessment and review of potential safety issues.

The present study revealed that correlation between nurses' knowledge and their performance regarding shift report handover. There were significantly positive correlation in pre test of training program. This finding is disagreed with Abdel Aal, (2016) [2] who found that there was no significant correlation between nurses' knowledge and their performance. On the same line Abd El-Kader, (2014) [3] found that no relation noticed between nurses' knowledge and their performance. Moreover, Seleim, (2012) [32] found that there was a negative relation between nurses' knowledge and their practice.

## Conclusion

The study results lead to the conclusion that the nurses' in the study setting have poor knowledge and low performance of communication and shift report handover before implementation of the training program, and the training program for shift report handover is effective in improving their knowledge and performance. There were significant positive correlation between knowledge score and performance score in pretest training program. Meanwhile no significant correlation between knowledge score and performance score in post and follow-up phases of training program.

## Recommendations

In view of the main study findings, the following recommendations are proposed. Hospital should develop an information and documentation nursing system to facilitate and help nurses' to document patients' data. The applicability of shift report handover should be supported from the hospitals administration. Replication of the study at different health care setting. In service training should include more information and skills related to importance of communication and how to chart the important details related to patient care, nursing intervention, patient response to each nursing care and all observations needs to be charted during patient care. Encourage nurses' to fill documentation forms regularly and should include only necessary data. Nursing supervisor should increase their review, follow up and updating knowledge, skills and forms used to improve quality of nurses' documentation. Rewarding nurses' for their high performance is recommended as a one of the important means of encouraging quality care.

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