

APPLICATION OF INTRADEPARTMENTAL NURSING REPORTING SYSTEM AT SUEZ CANAL UNIVERSITY HOSPITAL

Amany GHandour*¹ SaharHamdy¹. WafaaAbdelazeem²Hassan Ahmed ³

¹ Nursing Administration Faculty of Nursing – Zagazig University Egypt

²Nursing Administration Faculty of Nursing Ismailia - Suez Canal UniversityEgypt

³Physical Medicine &Rehabilitation. Faculty of Medicine – Sues Canal UniversityEgypt

E-mail a_ghandour2006@yahoo.com

Abstract

Aim: to applying a nursing reporting system at the Suez Canal University Hospital. A quasi experimental design was used to conduct the present study. The study was conducted at the Suez Canal University hospital. A convenience sample of 300 nurses and all head nurses (n=22). Two tools were used to collect data, namely; questionnaire sheet and auditing sheet. **Results:**Before implementation of the program more than half of nurses and head nurses (67% & 88.4%, respectively) had inadequate knowledge regarding intradepartmental nursing reporting, while after the implementation of the program all of the nurses and the highest percentages of head nurses had adequate knowledge (100% & 90.7% respectively). The head nurses had unsatisfactory practice regarding intradepartmental nursing reporting before implementation of the program (86.9%), while after implementation of the program the highest percentage of them had a satisfactory level (87.3%). **Conclusion and recommendation:** There were positive correlations between the total mean score of knowledge and practice of head nurses regarding intradepartmental nursing reporting after implementation of the training program. It is recommended that should be close monitoring and supervision of nurses' staff to ensure that they follow guidelines of nursing report.

Key words: Intradepartmental, nursing report

Introduction

Training is the backbone of workplace success, safety, and performance which serves as the catalyst for employee skills improvement and development. Instituting a concrete and comprehensive workplace training program will provide any organization with charted results, measurable success and solidifies standards to achieve the quality care⁽¹⁾.

Nursing report is a written, oral, or computer- based communication intended to convey information to others. It is the process of informing the other staff about the patients and of other events. It is a statement prepared to present facts relating

to planning, coordinating, performance and the general state of services in an organization⁽²⁾. It provides an account of what is known and relevant information about patients that exchanged between health team members and offer a summary of activities performed⁽³⁾.

There are two types of nursing reporting, which are interdepartmental and intradepartmental. Interdepartmental report; are those exchanged between nursing department and other hospital departments such as admission office, reports from the division to administrative departments are usually the responsibility

of a unit manager and the patient condition is given by the head nurse to the matron⁽²⁾.

The intradepartmental reports are those exchanged between members of different categories within the nursing service department, as the head nurse and the nursing service director. An intradepartmental report includes three types; shift report, daily conditional report and incident report⁽⁴⁾.

Shift report: it is an oral and written report given by the head nurse on one shift to the head nurse and all members of the coming shift. It is exchanged at the beginning of the oncoming shift. It is written summaries of pertinent information about patients' condition and activities related to their care⁽²⁾.

The daily condition report is a report about the unit ward to the nursing office. It is a concise summary of the conditions and the therapeutic plans for a specified group of patients and is written by the head nurse close to the end of each tour of duty. Meanwhile, every morning matron receives a report from the night superintended about events occurring in the hospital during the previous twenty four hours. This is based on writing reports received from the night nurses in charge of each ward, and is essentially a summary of changes that have occurred in the hospital during this period. Thus, the matron is put in touch with the general situation in the hospital immediately she comes on duty⁽⁵⁾.

Incident reports are the reports used to document any unusual occurrence or accident in the delivery of client care, such as falls or medication errors. These reports are used for quality improvement and should not be used for disciplinary action against staff members. It improves the management and treatment of patients by identifying high-risk patterns and initiating in-service programs to prevent future problems. These should be concise,

accurate, reported exactly what was observed and what action was taken, and not explain the cause or make excuses and do not place blame in the report⁽²⁾.

The nurses play a crucial role in keeping the patient's family and significant others updated about the patient's condition and progress toward goal achievement. Nurses need to clarify what types of information are able to communicate and document in different types of reports, so it is necessary to provide training for staff nurses regarding nursing reporting to enhance their knowledge and practice that will influence the quality of nursing care provided to patients⁽⁶⁾.

Subjects and methods

The aim of the present study is to

Applying intradepartmental nursing reporting system at the Suez Canal University Hospital through:

1. Assess nurses and head nurses' knowledge regarding nursing reporting.
2. Assess head nurses' practice regarding different types of reporting.
3. Implement of the training program about nursing reporting for nurses and head nurses based on the assessment data.
4. Evaluate the effect of the training program on nurses' knowledge regarding nursing reporting.
5. Evaluate the effect of the training program on head nurses' knowledge and practice regarding nursing reporting

To fulfill this aim the following research hypotheses were formulated:

1. Nurses and head nurses' knowledge about nursing reporting will be improved after implementation of the training program.
2. Head nurses' practice about nursing reporting will be improved after

implementation of the training program.

The subjects and methods used in carrying out the study are presented under the following four main designs; technical, operational, administrative, and statistical.

I. Technical Design

The technical design includes the research design, setting, subjects, and tools of data collection.

Research Design:

A quasi experimental design was used to conduct the present study.

Setting:

The study was conducted at the Suez Canal University hospital. It consists of 11 departments, namely; burns unit, dialysis unit, operating room, obstetric & gynecological unit, emergency department, Heart catheterization unit, medical unit, and four ICU (cardiac, chest, hepatic and newborn). This hospital providing paid service without profit. Suez Canal University Hospital provides a unique inpatient and outpatient services to all categories of the community. The hospital with bed capacity 450 beds.

Subjects:

Two groups of subjects were included in this study. These consisted of a group of head nurses and a group of nurses

Head nurses group

All head nurses and their assistant who working in the above mentioned setting (n=22). Every department included at least one head nurse and one assistant head nurse. The mean age of head nurses was 35.58 ± 8.24 years. The highest percentage of them were female, married, and all of them had a bachelor degree in nursing (96.4%, 89.3%, & 100%, respectively). As regards the years of experience, the highest percentage of head nurses had ten years of experience and more with mean year 10.24 ± 2.07567 .

Nurses group:

A convenience sample of nurses who working in the above mentioned setting (n=300) at the time of data collection who have at least one year of experience in nursing. the mean age of nurses was 25.5 ± 4.2 years. The highest percentage of them female, married, and had a bachelor degree in nursing (90.7 %, 75.8%, & 77.3%, respectively). As regards the years of experience, the highest percentage of nurses had a year of experience range from 5 to less than 10 years with mean year 7.24 ± 4.07567 .

Tools of Data Collection:

Two tools were used to collect data for this study.

Tool I: Questionnaire sheet:

It was developed by the researcher based on literature review to assess nurses and head nurses' knowledge about reporting procedures and the types of reports. It consists of two parts:

- **Part I:** Personnel characteristics data sheet used to collect data about staff nurses such as; age, year of experience, gender, job title, marital status, and educational qualification.
- **Part II:** It consists of 75 questions in the form of multiple choice grouped under three types of reports; shift report (25 questions), daily condition report (25 questions), and incident report (25 questions).

The reliability of the questionnaire measured through estimating its internal consistency which used Cronbach alpha coefficient. The reliability coefficient for the knowledge questionnaire was 0.89 .

The scoring system:

The responses were one score for correct answers, and zero for incorrect answers. The total score for each head nurse was calculated and converted into percent score by dividing the head nurse

total score by the maximum possible score.

The level of knowledge score was adequate if the knowledge score equal and more than 60% and the level of knowledge was inadequate if the score less than 60%.

Tool II: Auditing sheet

It was developed by the researcher based on literature review is to assess practice of head nurses regarding nursing reporting. It was intended for use in the different departments included in the study. It consists of three parts corresponding to the three reports under study

- 1-First part: auditing of shift report it consists of 16 items to cover general characteristics, introduction, and patient data.
- 2-Second part: auditing of daily condition report it consists of 24 items to cover general characteristics, introduction, patient type in the reports, and contents
- 3-Third part: auditing of incident report it consists of 23 item to cover general characteristics, types of incident or event, writing in the incident report and content of incident report.

The reliability of the **Auditing sheet** measured through estimating its internal consistency which used Cronbach alpha coefficient. The reliability coefficient for the knowledge questionnaire was 0.87.

The scoring system:

The responses were done & not done, one scores for done, and zero for not done, and the total score for each study subject was calculated and converted into percent score by dividing the total score by the maximum possible score.

The level of practice score was satisfactory if the practice score equal and more than 60% and the level of practice

score was unsatisfactory if the score less than 60%.

II. Operational Design:

This design included preparation of the tools, pilot testing of these tools and implementation methods of data collection.

a-Pilot study:

A pilot study was carried out with 10% of the study sample (3) head nurses and (30) nurses to test the questionnaire feasibility, understandability and to estimate the time consumed for filling in the forms. A brief explanation of the purpose of the study was provided to every participant in the pilot study, and then he was provided with a copy of the questions. The time consumed in answering the questions was about 20 to 30 minutes for the tool. Auditing was used by researchers and the time consumed were about 20 – 35 minutes each for the head nurse. Data collected from the pilot study was reviewed and minor modifications to items of the tools so the nurses and head nurses excluded from the study sample.

b. Methods of data collection:

It was necessary for the researcher to introduce herself and explain the purpose of the study for nurses and head nurses included in the study. After an explanation of the study, the questionnaire sheets were answered by nurses and head nurses in morning and afternoon shifts and the researcher assessed practice of head nurses by use auditing. The researcher was present at all the time for any clarification. Data collection was carried out during s period from the beginning of September 2017 to the end of March 2018.

Validity

The tools were distributed to a jury group and then the content and face validity were established by a jury of seven experts from the faculties of nursing in Cairo, and Zagazig Universities. The

first part included the opinions of the experts for each item that were recorded on a two point scale: relevant, and not relevant; and the second part covered general or overall opinion about the form which express their opinions and comments on the tools for clarity, applicability, comprehensiveness, understanding, any suggestions for any additional or omissions of items and ease of implementation. According to their opinions all recommended modifications were performed by the researcher

Training Program:

The training program has been developed for the nurses and head nurses based on an actual assessment of their needs. These have been identified through the baseline testing of their knowledge and practice regarding nursing reporting. The objective of the program was to enhance nurses and head nurses' knowledge and practice regarding nursing reporting. Total duration of the program was 14 hours, divided into (5) hours theory and (9) hours practice.

Field work:

Preparatory phase: It began with reviewing the theoretical and empirical literature of national and international resources concerning the topic of the study using textbooks, articles, magazines, research, and internet search in order to get a clear picture of all aspects related to the study. The pre-test questionnaire was distributed to the nurses and head nurses to assess their training needs regarding nursing reporting. Some of the nurses and head nurses filled in the questionnaire sheet at the same time of distribution and some of them returned it back later it took thirty minutes for study subjects to answer the questionnaire. The practice of head nurses was checked by the researcher through use auditing to collect data by the researcher from eleven study departments

in Suez Canal University Hospital. Data were collected in every department period for seven days. Auditing covered the writing of shift report by the head nurses in every department.

Also, auditing of the writing of the daily condition report by the head nurse or assistant was audited for seven days in the morning, afternoon, and night shift. As for the auditing of the incident report, it was also done in all the departments over the three shifts. Based on the collected data from every department, and by asking the director of the hospital and the nursing director.

Based on the result of pre-test, the nurses and head nurses learning needs were identified. Accordingly, the objectives of the program were stated and the content was designed.

Implementation phase: The training program designed for this study has been implemented through 5 sessions (of which 5 theory session and followed with 3 practical sessions after take a break for 15 minutes). These sessions lasted for 14 hours; 5 hours of theory (one hours for each theoretical session), and 9 hours of practices (three hours for each practical session). It was difficult to take the whole number of the study subject at the same time, the nurses and head nurses were divided into 11 groups, each group about 30 participants. All sessions were repeated to the 11 main groups until all study subjects completed the entire 14 hours of instructions.

The program consists of two main parts, the first theoretical part covers general objective of the program, knowledge about nursing reporting such as; definition, importance of reporting, Principles of documentation in reporting, characteristic of oral and written reports, types of report. At the beginning of each session the researcher summarized the

previous sessions, taking into consideration the use of scientific terms to suit the nurses and head nurses' level. In the practical sessions, a brief explanation of each proposed form of the report was explained to the head nurses; each of the subgroups would study and present the respective format. Then, the format was taken by each head nurse or her assistant to the respective departments, to be used. The next day, she had to bring the filled form and present it to the group before the beginning of the daily sessions. This was repeated for each of the three reports. The program given for three days per week about three weeks for each group and repeated until completed all groups.

The investigator used various teaching methods to attract head nurses' attention and motivate them to participate such as lectures, group discussion and brainstorming. The teaching media included: power point, posters and a copy of the program which covered theoretical and practical information about intradepartmental nursing reporting.

Evaluation phase: The evaluation phase focused on estimating the impact of the training program on the nurses and head nurses' knowledge and practice about intradepartmental nursing reporting by using the same tools in the pre-post program implementation. The program evaluation was applied two times for nurses and head nurses one before the program and second occurred immediately after completion of the training program.

III. Administrative Design:

Before starting any step in the study, an official letter was obtained from the Dean of the Faculty of Nursing, Suez Canal University, to the Director of Suez Canal University Hospital, for permission and cooperation to conduct the study.

Ethical Considerations:

The study was approved by the Ethics Committee at the Faculty of Nursing; Suez Canal University. The verbal explanation of the nature, purpose, and benefits of the study was performed by the researcher to nurses and head nurses included in the study sample. Oral consent was taken from subjects and reassured them about confidentiality and anonymity of the study. They were informed about their right to refuse or withdraw from the study at any time without giving a reason.

IV. Statistical Design

Data entry and statistical analysis were performed using computer software, the statistical package for social sciences (SPSS), version 14. Suitable descriptive statistics were used such as; frequency, percentage, mean and standard deviation. The chi – square test was used to detect the relation between the variables. In addition, correlation coefficient (r) test was used to estimate the close association between variables. P-values which were less than 0.05, 0.001 were considered as statistically significant and highly significant respectively. The given graphs were constructed using Microsoft Excel software

Table(1):The mean score of nurses' knowledge regarding intradepartmental nursing reporting throughout the program phases. It is well-defined from the table that there is a highly statistically significant difference between the total mean score of nurses' knowledge regarding intradepartmental nursing reporting before and immediately program implementation ($p < 0.00$)

Figure (1):Level of nurses' knowledge regarding intradepartmental nursing reporting throughout the program phases is presented in figure (2). Before

implementation of the program more than half of nurses (67%) had inadequate knowledge regarding intradepartmental nursing reporting. After the implementation of the program all of the nurses (100%) had an adequate level of knowledge

Table (2) : Shows the mean score of head nurses' knowledge regarding intradepartmental nursing reporting throughout the program phases. It is well-defined from the table that there is a highly statistically significant difference between the total mean score of head nurses' knowledge regarding intradepartmental nursing reporting before and immediately program implementation ($p < 0.00$)

Figure (2): shows levels of head nurse' knowledge regarding intradepartmental nursing reporting throughout the program phases. It is well-defined from the figure before implementation of the program the majority of head nurses (88.4%) had inadequate knowledge regarding intradepartmental nursing reporting. After the implementation of the program, the highest percentages of them (90.7%) had an adequate level of knowledge.

Table (3): Shows the mean score of head nurses' practice regarding intradepartmental nursing reporting throughout the program phases. It is cleared from the table the highest mean score was related to the incident report before and after implementation of the program (5408 ± 21734 & 9592 ± 03358 , respectively), while the lowest mean score

was related to daily condition report (416 ± 18870 & 8887 ± 08672 , respectively). With a statistically significant difference.

Figure (3): Before implementation of the program the majority of nurse interns (86.9%) had an unsatisfactory practice regarding intradepartmental nursing reporting. After the implementation of the program the highest percentage of them (87.3%) had a satisfactory level of practice.

Table(4): Shows the relation between the total mean score of knowledge and personal characteristics of the nurses throughout program phases. It is clear from the table there is no statistically significant difference between the total mean score of nurses' knowledge and their personal characteristic before and immediately post program implementation ($p > 0.05$)

Table(5): Shows correlation between knowledge of head nurses and their personal characteristics. It is cleared from the table there was no correlation between the total mean score of head nurses' knowledge and their personal characteristic throughout the program phases

Table(6): Shows correlation between the practice of head nurses and their personal characteristics before and after implementation of the program. It is cleared from the table there was no correlation between the practice of head nurses and their personal characteristics throughout the program phases.

Table(1): Mean score of nurses’ knowledge regarding intradepartmental nursing reporting throughout the program phases (n=300).

Domains of Knowledge	Prep program (N=300)	Post program (N=300)	Chi- square	P value
	Mean±SD	Mean±SD		
Shift report	12.5567±3.25712	23.2133±1.49508	-51.503-	0.00**
Daily condition report	14.0900±4.29769	22.1933±2.03874	-29.506-	0.00**
Incident report	12.7533±4.59378	22.8367±1.64489	-35.793-	0.00**
Total score	39.4000±10.57289	68.2433 ± 3.77513	-44.500-	0.00**

** P < 0.01 (significant)

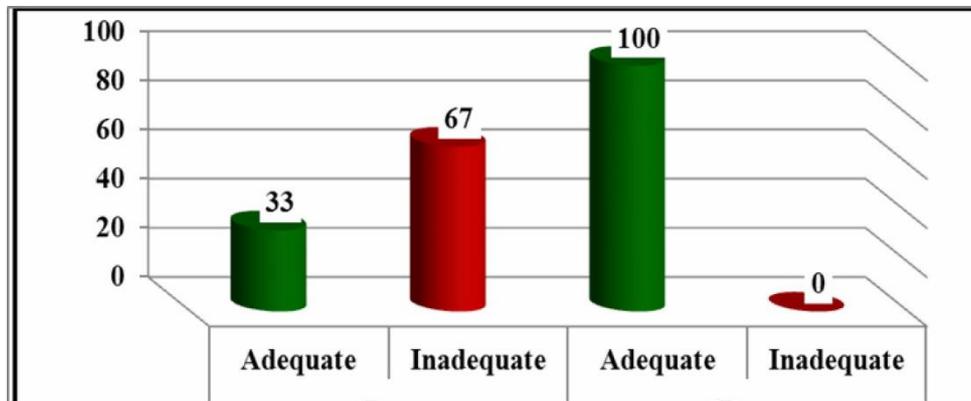


Figure (1): Total level of nurses’ knowledge regarding intradepartmental nursing reporting throughout the program phases (n=300)

Table(2): Mean score of head nurses’ knowledge regarding intradepartmental nursing reporting throughout the program phases (n=22).

Domains of Knowledge	Prep program (N=22)	Post program (N=22)	Chi- square	P value
	Mean±SD	Mean±SD		
Shift report	13.9533±4.59378	23.8367±1.64489	-38.793-	0.00**
Daily condition report	15.0900±4.29769	24.2133±1.49508	-30.506-	0.00**
Incident report	11.5567±3.25712	21.1933±2.03874	-31.503-	0.00**
Total score	40.6±12.14859	69.2433± 5.17871	-44.500-	0.00**

** P < 0.01 (significant)

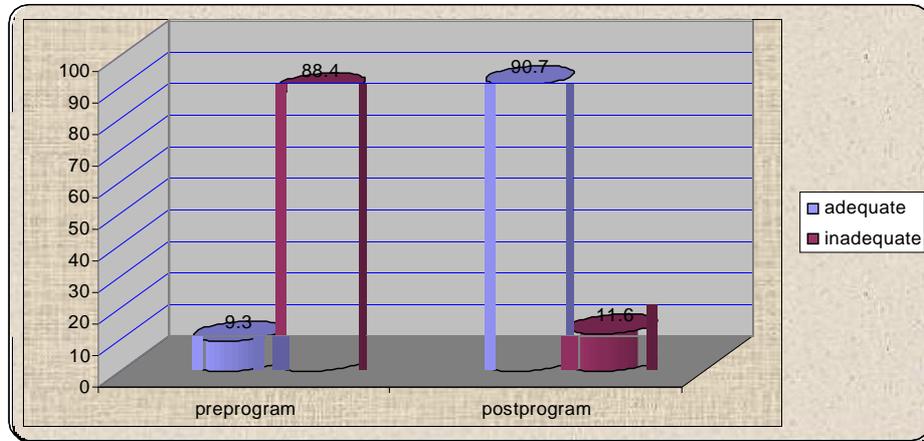


Figure (2): levels of head nurses' knowledge regarding intradepartmental nursing reporting throughout the program phases (n=22)

Table (3): Mean score of head nurses' practice regarding intradepartmental nursing reporting throughout the program phases (n=22).

Domains of practice	Prep program (n=22)	Post program (n=22)	Ttest	P value
	Mean±SD	Mean±SD		
Shift report	.4976±.15971	.9048±.09843	-11.355-	.000
Daily condition report	.416±.18870	.8887±.08672	-11.410-	.000
Incident report	.5408±.21734	.9592±.03358	-9.558-	.000

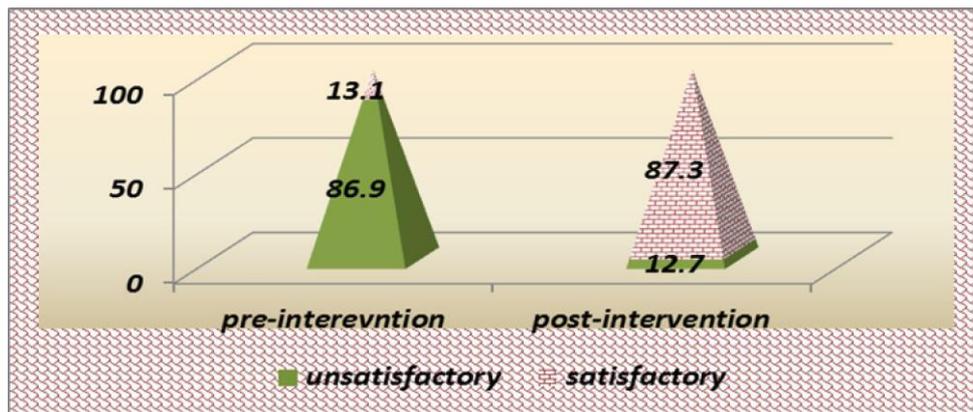


Figure (3): levels of head nurses' practice regarding intradepartmental nursing reporting throughout the program phases (n=22)

Table(4): Relation between total mean score of knowledge and personal characteristics of nurses throughout the program phases(n=300)

Items of a personal characteristic	Total knowledge mean score					
	Prep program (N=300)			Post program (N=300)		
	Mean ±SD	Independent t test	P value	Mean ±SD	Independent t test	P value
Age in year						
>25	176.7273±31.959	1.49	>0.05	283.7273±45.510	0.539	>0.05
25-	187.9032±35.799			278.2581±44.488		
35+	5.1455±2.97158			32.4182±6.96736		
Gender						
Male	180.4384±35.286	0.206	>0.05	281.5068±46.315	0.121	>0.05
female	182.5385±23.067			283.1538±38.008		
Marital status						
Single	185.2069±31.842	1.79	>0.05	286.3276±41.373	1.36	>0.05
Married	171.5357±35.878			272.2857±51.106		
Year of experience						
<5	170.5000±36.582	1.35	>0.05	278.7143±57.204	1.44	>0.05
5-	186.8519±21.382			271.5556±46.766		
≥10	174.3333±25.403			304.5000±12.206		

Table(5): Correlation between knowledge of head nurses and their personal characteristics throughout the program phases (n=22)

Personal characteristics		Knowledge score					
		Shift report		Daily condition report		Incident report	
		pre	post	pre	post	pre	post
years of experience	r	.120	.061	.150	.108	.063	.255
	P value	.435	.583	.315	.474	.613	.130
Age	r	.119	.071	.150	.101	.063	.273
	P value	.535	.683	.315	.474	.613	.135
Gender	r	.122	.185	.184	.146	.183	.030
	P value	.444	.324	.330	.440	.335	.820
Marital status	r	.127	.025	.029	.024	.077	.252
	P value	.436	.808	.784	.797	.589	.158

Table(6): Correlation between practice of head nurses and their personal characteristics throughout the program phases (n=22)

Personal characteristics		Practice score					
		Shift report		Daily condition report		Incident report	
		pre	post	pre	post	pre	post
years of experience	r	.122	-.081-	-.160-	-.111-	.073	-.288-
	P value	.535	.683	.415	.574	.713	.137
Age	r	.122	-.081-	-.160-	-.111-	.073	-.288-
	P value	.535	.683	.415	.574	.713	.137
Gender	r	-.120-	.190	-.188-	-.147-	-.187-	-.040-
	P value	.544	.334	.339	.455	.340	.841
Marital status	r	.123	-.023-	-.029-	.026	.079	-.262-
	P value	.536	.908	.884	.897	.689	.178

Discussion:

One of the major responsibilities of nursing profession is how to communicate, report, take report, and record information (**Salimi et al**)⁽⁷⁾ Nursing report is the official exchange of information between nurses in written or oral form at the end of each shift. Besides recording the written report of nurses, oral report is a communication method which its purpose is to transfer essential and key information about patients' medical care (**Sabet et al**)⁽⁸⁾.

The present study aimed to applying a nursing reporting system at Suez Canal University Hospital through; assess nurses and head nurses' knowledge regarding nursing reporting, assess head nurses' practice regarding different types of reporting, implement of the training program about nursing reporting, and evaluate the effect of the training program on nurses and head nurses' knowledge and practice of head nurses.

To fulfill the aim of the study two hypotheses was formulated and tested; nurses and head nurses' knowledge about nursing reporting will be improved after implementation of the training program. Secondly the head nurses' practice about nursing reporting will be improved after implementation of the training program.

The findings of the present study revealed that the highest percentages of nurses and head nurses had an inadequate level of knowledge regarding nursing reporting before implementation of the program. This may be due to the nursing curriculums include minimal information about reporting in nursing , in addition to absence of refreshing courses and training programs during employment, unavailability of handouts to be used as a nursing guide & absence of an orientation program related to nursing reporting that help them to acquire knowledge. This

finding disagreement with the study carried out in Ahmadu Bello University Teaching Hospital (Abuth) Zaria, Kaduna State by **Taiye** ⁽⁹⁾who evaluate the knowledge and practice of nurses towards documentation and found that the nurses have sufficient knowledge in documentation.

The present study findings revealed that there is a statistically significant improvement in the level of nurses and head nurses' knowledge regarding nursing reporting after program implementation to reach the adequate level. This improvement could be assigned to one or more rationales, which include the comprehensive content of the educational training program, the written handout of the program which serves as ongoing reference, study subjects interest and keenness to know and change, consideration of the patterns of adult learning, encouragement of questions, interactive talk with the utilization of multimedia and repetition of the knowledge through a mixture of textiles. As well the nurses and head nurses were satisfied with the content of the program and they endeavor to apply what learn in nursing reporting.

These findings were agreement with the study conducted in Cairo university Hospitals by **Safey**⁽¹⁰⁾who assess the effect of a comprehensive nursing documentation training program to staff nurses on their documentation skills and found that the nurses' knowledge was improved after implementation of the training program. Also the study conducted in Benha by **Hasanin**⁽¹¹⁾who designing electronic clinical administrative records and reports for nurses and found that the majority of nurses had good knowledge regarding reporting after implementation of the program compared

to preprogram .Again the study carried in Mbale, Eastern Uganda by **Obioma**⁽¹²⁾ who implementing a training program for nurses regarding nursing documentation and found that the knowledge of nurses was improved after implementation of an educational intervention

Nurses' shift reports are routine occurrences in healthcare organizations that are viewed as crucial for patient outcomes, patient safety and continuity of care(**Buus et al.**)⁽¹³⁾.The findings of the present study showed that the highest mean score of nurses' knowledge regarding nursing reporting was related to shift report, while was related to daily condition report among head nurses before and after implementation of the training program. This may be due to the written nursing report is one of the main responsibility of the staff nurses. And the improvement after implementation of the program could be assigned to one or more rationales, which include the comprehensive content of the educational training program, the written handout of the program which serves as ongoing reference, nurses and head nurses interest and keenness to know and change, consideration of the patterns of adult learning, encouragement of questions, interactive talk with the utilization of multimedia and repetition of the knowledge through a mixture of textiles. As well the participants were satisfied with the content of the program and they endeavor to apply what learn in intradepartmental nursing reporting and the desire of them to gain knowledge to be applying in different designs this give the explanation for this result.

In the same vein with **Sherman et al** ⁽¹⁴⁾who mentioned that the bedside shift-to-shift nursing reports increases patients' satisfaction, improves the nurse-patient relationship, decreases patient falls,

discharge time occurs faster, strengthens teamwork, and leads to better nurse accountability and prioritization at the start of the shift .

The findings of the current study showed that the lowest mean score of nurses and head nurses' knowledge regarding nursing reporting was related to incident report before and after implementation of the training program. This may due to the nurses are socialized during faculty/ school to strive for perfection in terms of freedom from errors, they proposed that this socialization causes an attempt to control and take responsibility for all events with the patient. It is possible that socialization is a stronger behavioral determinant than knowledge of the law. While after implementation the program the mean score of incident report improved, but still the lowest mean score this indicates the needed for continuous training programs for upgrading the knowledge for the subjects.

The findings of the current study agreement with the study carried out by **Nakamura et al.**⁽¹⁵⁾ who found that the training on incident reporting will significantly improve the nurses' knowledge in sentinel events and near misses .Also , this finding is in line with **Bagenal et al** ⁽¹⁶⁾who comparing the attitudes and knowledge toward incident reporting in junior physicians and nurses in a district general hospital and found that the nurses had lowest mean score of knowledge regarding incident report. Furthermore, the study carried in Saudi Arabia by **Alboliteh and Almughim**⁽¹⁷⁾ who assess the Knowledge, Attitude and Practice of Physicians and Nurses toward Adverse Event Reporting System in Primary Health Care Setting and found that most of the nurses had a good knowledge about incident report.

The findings of the present study revealed that the highest percentages of head nurses had unsatisfactory level of practice regarding nursing reporting before implementation of the program and there is an improvement in practice to reach a satisfactory level after implementation of the training program. This could be due to absence of training courses and workshop during employment about nursing reporting that influence on their practice, in addition to the training program includes many activities and situations and acquired enough skills how to fill the different types of report. These findings were agreement with the study conducted by **Hasanin**⁽¹¹⁾ who found that there was improvement in nurses' practice regarding reporting at post intervention phase compared to pre intervention phase.

Incident reporting is a mechanism which enables health professionals to disclose unintended injury and near misses caused by a healthcare system or a health professional (**Evans et.al**⁽¹⁸⁾). The findings of the present study showed that the highest mean score of head nurses' practice regarding nursing reporting was related to incident report before and after implementation of the training program. This may be due to the head nurses were more aware of the benefit of incident reporting system and believed that the reported incidents would be used in a positive way in that health professionals could learn from their mistakes and improve healthcare system and service without fear of administrative and/or legal consequences this give explanation for this results.

This finding agreement with the study carried out by **Nakamura et al**⁽¹⁵⁾ who found that the nurses who had received training on incident reporting were more likely to report incidents than those who did not receive training about

incident reporting. While this findings disagreement with the study of **Hanafi et al**⁽¹⁹⁾ who assess the knowledge, attitudes and practice of nurse regarding adverse drug reaction reporting and found that the practice of participants regarding incident report were not satisfying. Also the study carried out by **Throckmorton and Etchegaray**⁽²⁰⁾ who assess the factors affecting incident reporting by registered nurses and found that the nurses had low level of practice regarding incident report.

The post program audits have been demonstrated statistically significant improvements in the performance of head nurses in all items of incident report. This improvement indicates that the program succeed in raising the scores of this items of practice in which the researcher used various teaching methods and simply language that use as well as, allow of open discussion in the session and the trained head nurse will become open-minded, consider the benefit of error reporting, keep on self-training, and will accept incident reporting as a norm. This findings agreement with the study carried out by **Hwang et.al**⁽²¹⁾ who found that the practice of head nurses toward incident report increase after implementation of the training program.

On the other hand this findings disagreement with the study carried out by **Dehghan et al**⁽²²⁾ who found that there are no significant differences in the performance of head nurses regarding incident report before and after implementation of the training program. Also the study done by **Okaisu et al**⁽²³⁾ who assess the quality of nursing reporting and found that the training alone was insufficient to change the practice of head nurses toward incident reporting.

The findings of the present study showed that the lowest mean score of head nurses' practice regarding nursing

reporting was related to daily condition report before and after implementation of the training program. This findings could be explained by the fact that unavailability of instructional handouts, lack of training courses and programs, lack of supervision, and lack of incentive for carrying nursing reporting. The post program audits have been demonstrated statistically significant improvements in the performance of head nurses in all items of incident report compare to pre program. This may be due to the success and the positive effect of the training program may be attributed to the continuous encouraging feedback from the researcher, the researchers also were supporting head nurses' autonomy, which improve their skills. Another important factor is the use of appropriate teaching strategies. These findings agree with previous study carried by **Shazly**⁽²⁴⁾ who demonstrated that training program can be effective in improving practice of nurses toward daily condition report.

The post program audits have been demonstrated statistically significant improvements in the performance of head nurses in all items of daily condition report. Such improvement could be attributed multiple causes, which include the comprehensive content of the training program, the written handout provided to head nurses serving as an ongoing reference, the application of adult learning rules throughout the sessions of the program with encouragement of questions, participation, and interactions along with the use of multimedia. Added to this is the head nurses' interest and eagerness to know and change. In this respect **Marquis & Huston**⁽²⁵⁾ who mentioned that the head nurse is the liaison person between patient care units and other professionals or other departments. She / he has a coordinating function, and establishes a network of

communication between the patient care units and other departments' personnel.

The findings of the current study reveal that there was no statistically significant difference between the total mean score of knowledge and practice of study subject's regarding nursing reporting and their personal characteristic before and after program implementation. This may be due to there are many constituents that influence on the knowledge and practice of nurses and head nurses such as training classes, workshop, self- learning and conferences not the personal characteristics of the learners.

These findings are consistent with a study was conducted by **Shamsuddin and Shafie**⁽²⁶⁾ who found that there were no statistically significant difference between the total mean score of nurses' knowledge and their personal characteristics after implementation of the training program. Also **EL- sayed**⁽²⁷⁾ who found that there were no statistically significant difference between the total mean score of nurses' practice and their age after implementation of the training program. Again, the study was conducted in Miyazaki by **Larson et al.**⁽²⁸⁾ who showed that there were no statistically significant differences between nurses' knowledge and their age. In the same line the study done in India by **Michael et al.**⁽²⁹⁾ who found that there were no significant association between registered nurse knowledge score and their personal characteristics.

The findings are inconsistent with a study conducted at Caribbean by **Sena and Michae**⁽³⁰⁾ who found that there were statistically significant correlation was detected between nurses' age, and their practice and the same author found that there are statistically significant relation between nurses' knowledge and their educational qualifications. Also the study

carried by **Wing et al** ⁽³¹⁾ who found that there was a statistically significant positive correlation between nurses' knowledge and their personal characteristics such as age, educational qualification and years of experience throughout the training program phases. Also, these findings are agreement with a study by meanwhile the study carried out by **Gonçalve et al** ⁽³²⁾ who found that there was a statistically significant correlation between nurses' knowledge and years of experience. In the same line the study by **Alboliteh & Almughim** ⁽¹⁷⁾ who demonstrated that there was a statistically significant correlation between nurses knowledge and their age.

The results of the current study showed that there was a positive correlation between knowledge and practice score of head nurses after implementation of the program phase. This may due to the training program enhance the knowledge of head nurses about nursing reporting this reflects on their practice.

These findings are in accord with a study in chine by **Jiang et al.** ⁽³³⁾ who found that there was a positive correlation between head nurses' knowledge and practice. Also the study carried out in Zagazig university hospitals by **Alsaid** ⁽³⁴⁾ who found a positive correlation between head nurses' knowledge and practice. While this finding disagreed with the study that carried out by **Mohammed** ⁽³⁵⁾, who found that there was no correlation between level of nurses' knowledge and practice throughout the training program phases.

Conclusion

Based on the study findings, it could be concluded that:

The nurses and head nurses' had an inadequate level of knowledge and an unsatisfactory practice level among head

nurses regarding intradepartmental nursing reporting before implementation of the training program. While after program implementation, the nurses and head nurses' had adequate a level of knowledge and satisfactory level of practice among head nurses. Additionally, there were only positive correlations between the total mean score of knowledge and practice of head nurses regarding intradepartmental nursing reporting after implementation of the training program and this match with the research hypothesis.

Recommendations

In the light of the study findings, the following recommendations can be proposed:

- Continuous training courses to train nurses and head nurses about the benefits of incident reporting with regard to ensuring and promoting patient safety.
- Establishing a system which encourages nurses and head nurses to report incidents in a way that they are protected from administrative sanctions and legal penalties.
- Implementing a training program for head nurses and nurses that are essential in order to increase their knowledge and practice about nursing report.
- There should be close monitoring and supervision of nurses and head nurses to ensure the following guidelines in writing the nursing report.

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