

Evaluating the Knowledge and Skills of Nurses among Specialized and General Hospitals

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Abstract

Background: Nursing is one of the core duties in the complete health systems, the knowledge and skills of nurses are vital not only to provide comprehensive care but also to enhance and promote competence. This study is a comparison between a general and a specialized hospital. **Objectives:** Measure knowledge, and skills among nurses in two different hospitals. **Methods:** A cross sectional survey questionnaire used for collecting data, 60 nurses from each hospital. **Statistical analysis:** Descriptive statistics, chi-square test used to compute association among variables, the p-value of <0.05 was considered as statistically different. **Result:** There is no difference in skills and knowledge in most procedures except for some specific procedures. In addition, the load of work varies from hospital to others. **Conclusion:** Nursing, in both hospitals; showed having the required level skills and knowledge. However, continuous cross training directed to enhance some specific nursing procedures, regardless of the working hospital.

Keywords: Knowledge, Nurses, Skills.

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INTRODUCTION

Nursing is one of the core duties in the complete health systems which; deliver high-quality patient's care; enhance health, assess disease prevention, give curative and implement rehabilitative health strategies [1]. Where they protect, promote, and optimize health status, through the diagnosis and treatment, and also enhance patient care [1].

The knowledge and skills of clinical nurses are vital not only to provide comprehensive nursing care but also to enhance and promote clinical competence [3].

Good nursing skills are the art of science, which involves working with patients, families, and communities to enhance the wellbeing of body, mind, and spirit. They are an active ongoing dynamic, therapeutic and educational process that serves to meet the required health needs in the entire community.

The following study is to compare the staff nursing knowledge and skills in a specialized (tertiary) (A) and a general (secondary) (B) hospitals.

The specialized hospital in the current study is a branch of medicine that focuses on one specific part

of health. nursing in both hospitals, contribute in the care plan and assess in treating patients suffering from specific (A) and general (B) problems [1], they also carry out the assessments for patients before and after intervention [2].

The expectations level of nursing knowledge and experience of general nursing practice in general hospitals assumed to be higher than the level in specialized hospitals.

This argument based on the exposure of general nurses to various patients care that require gaining more knowledge and skills to provide health care.

Site

The current study conducted at a specialized hospital (A) as case subjects and a general hospital (B). Hospital A is 80-bed capacities, but the actual working capacity is 60-bed, which provides treatment to both in- and out-patient care.

Hospital A has 146 nursing staff including 19 staff working in other related clinical departments; (hospital B) is 30-bed capacities, which provide treatment to in- and out-patient, operating room,

emergency room, outpatient department, wards. it has 100 of nursing staff including 20 staff working in other related clinical departments, the common nursing practice in both hospitals are: taking vital signs, assisting in patient examination, administrating medications, providing pre and post-operative nursing care, arranging appointments, admission, participating in patient education, providing community awareness, and assisting in code blue situation. However, (hospital A) performs some specialized procedures.

Problem Statement

Level of knowledge, skills, and tasks may vary among nurses in general and specialized hospitals.

Objectives

- To find out if there is a gap in knowledge and skills between the two hospitals.
- Strengthen nursing knowledge and skills in practice to achieve a better patient outcome.
- To develop general nursing competency, critical thinking, communication skills, and enhance the quality of care given to the patients.

Research questions

Q1: Is there differences among nurses in A and B hospitals in terms of knowledge and skills?

Q2: How to eliminate the differences and improve patient care if there are?

Significance

Compare knowledge and skills of both hospitals, highlight-lacking area if there is, and promote comprehensive measures utilized through simulation and cross training.

Methods

It is a pilot study of nursing service evaluation, survey questionnaires research used for collecting information.

Questionnaire design

Participants given a list of predefined reliable questions related to nursing duties, using a five Likert scale system; comprising every possible duty and responsibility provided in both hospitals, the questionnaire considered not to include sensitive questions, such as, personal life, an embarrassment for participants.

The survey consisted of three sections; demographic characteristics, general nursing skills, and specialized nursing procedures, participants divided into two groups see the questionnaire attached table 2. Both A&B hospitals consist of 60 participants.

STATISTICAL ANALYSIS

Excel MS office, used for collecting data, SPSS software version 23 for the other calculation. Descriptive statics using frequency to calculate count and percentages, chi-square test used to compute association among variables, a p-value of <0.05 was considered as a statistically significant difference. For easier interpretation the five answers reduced to three Likert scales, cumulative percentage of strongly agree and agree, and for strongly disagree and disagree combined.

Inclusion/exclusion criteria

Hospital A: random nursing staff working in inpatient and outpatient services. Hospital B: random staff except for staff who are working in the same specialty of hospital A.

RESULT

The result of three sections of the questionnaire; demographic characteristics; general nursing questions; and specialized nursing questions reported separately.

Demographic characteristics

The flow of results starts with (hospital A) followed by (hospital B). Female and Saudi constitute the majority in both hospitals (85.0%), (93.3%), and (78.3%), (70.0%), respectively. Clinical nurses were the main participants (83.3%), (88.3%), diploma degree was the most common (63.3%), (75.0 %), work experience of more than two years (95.0%), (85.0%), there were no statistical significance difference among demographic characteristics for the two hospitals expect for departments, table 1.

Sections I and II

Reliability test performed for section II using Cronbach test & I were. 60 and .87 respectively. Responses obtained rated from low, moderate and high according to the average of the five Likert scale, where 3.40-5.00 indicates high (H), 2.60-3.39 indicates moderate (M), and 1.00-2.59 indicates low (L). High responses were the most in all questions of section I and II, table 2 for section I and table 3 for section II, those with statistical significant difference a Cramer's test performed to measure the effective size.

Average of the two sections figure 1 and for the questions where statistical difference found between the two hospitals figures 2 &3. Note that Q2.9 "have expose to work in a general hospital" even though there was statistical difference however, figure not included because hospital B is a general hospital.

Table-1: Demographic characteristics of participants of both hospitals, Frequency (%)

Participant's characteristics	Hospital A	Hospital B	Total	Chi-square, df, p value
Gender				
Male	9(15.0)	4(6.70)	13	2.15, 1, .12
Female	51(85.0)	56(93.3)	107	
Nationality				
Saudi	47(78.3)	42(70.0)	89	1.87, 1, .20
Non Saudi	13(21.7)	18 (30.0)	31	
Position				
Staff	50(83.3)	53(88.3)	103	4.82, 3, .185
Charge nurse	4(6.70)	6(10.0)	10	
Supervisor	2(3.30)	1(1.70)	3	
Others	4(6.70)	0 (0.0)	4	
Level of education				
Diploma	38(63.3)	45(75.0)	83	2.59, 2, .27
Bachelor degree	21(35.0)	15(25.0)	36	
Master degree and above	1(1.70)	0 (0.0)	1	
Number of years of practice as a nurse				
Two years or less	3(5.00)	9(15.00)	12	3.33, 1, .185
More than two years	57(95.0)	51(85.0)	108	
Department				
OR	10 (16.9)	2 (3.3)	12	40.31, 8, 0.00
ER	10 (16.9)	34(56.7)	44	
Education	0(0.0)	1(1.70)	1	
OPD	17 (28.3)	19 (31.7)	36	
Male ward	7 (11.7)	2 (3.30)	9	
Female ward	0 (0.0)	2 (3.30)	2	
Nursing administration	4 (6.70)	0 (0.0)	4	
SSU	8(13.3)	0 (0.0)	8	
Pre-hospital	4 (6.70)	0 (0.0)	4	

Note: Italic bold means statistical significance

Table-2: Section I general nursing questions

	Average response (SD)	χ^2 ,df, p value	Level of response
Q2.1 How would you describe your knowledge level in nursing?	3.87/3.83 (0.9/0.7)	3.81, 4, .43	H/H
Q2.2 How would you describe your skill level in nursing?	4.00/3.97 (0.7/0.75)	2.30, 3, .51	H/H
Q2.3 Do you think that nursing duties are affecting your health?	3.80/3.52 (1.0/1.8)	5.47, 4, .24	H/H
Q2.4 Do you plan for early retirement.	3.10/2.92 (1.3/1.5)	6.46, 4, .17	M/M
Q2.5 If you are working in a specialized hospital, do you think this will affect your skill and knowledge, compared to working in general hospital.	3.98/3.82 (1.1/1.05)	5.38, 4, .25	H/H
Q2.6 Less knowledge and skill of the staff nurse may affect organization services and quality of patient care.	3.48/4.22 (1.0/0.97)	2.35, 4, .67	H/H
Q2.7 I feel I am skilled enough to handle any emergency cases assigned to me.	3.10/3.63 (1.3/1.0)	1.34, 3, .72	M/H
Q2.8 Are you satisfied with knowledge and experience you get from your hospital?	3.30/3.35 (1.0/0.7)	8.66, 4, .07	M/M
Q2.9 Have you exposed to work in general hospital in the last 2 years?	2.10/3.38 (1.4/1.3)	27.0, 4, .00 Cramer's V=0.47	L/M
Weighted mean (SD) for all questions of section I	3.50/3.62 (0.5/0.5)	22.13, 22, .45	H/H

Note: Responses mean (SD) for A and B hospitals, chi-square test, Italic bold indicate statistical significance of $p < 0.05$, and level of response where, 3.40-5.00 indicates high (H), 2.60-3.39 indicates moderate (M), and 1.00-2.59 indicates low (L). Q2.9 due to hospital B a general hospital statistical significant difference if found.

Table-3: Section II specialized nursing questions

	Average (SD) responses, A&B hospitals	χ^2 ,df, p value	Level of response
Q3.1 I feel confident in taken blood extraction.	4.32/4.38 (1.0/0.8)	3.17, 4, .52	H/H
Q3.2 I can diagnose health problems by analyzing patient’s signs and symptoms then take the required action (nursing care plan NCP).	3.93/3.98 (0.9/1.0)	1.28, 4, .86	H/H
Q3.3 I am able to apply and follow the necessary guidance on health maintenance and disease prevention.	3.87/4.17 (1.0/0.9)	4.03, 4, .40	H/H
Q3.4 I participate in treatment plan with physicians, (e.g. inhalation therapy, physical therapy, etc.).	3.30/3.83 (1.2/1.1)	7.53, 4, .11	M/H
Q3.5 I can perform lab work and give complete information to the physician regarding the patient’s condition during anesthesia procedure.	2.93/3.55 (1.2/1.1)	23.54, 4, .001 Cramer’s V=.44	M/H
Q3.6 I can conduct research for improving the nursing practices and healthcare outcomes.	3.55/3.27 (1.0/1.2)	5.58, 4, .23	H/M
Q3.7 I feel I am confident in performing any nursing procedure.	3.80/4.00 (1.5/1.0)	3.28, 4, .51	H/H
Q3.8 I am capable to insert urinary catheter.	2.83/3.95 (1.4/1.1)	23.12, 4, .001 Cramer’s V=.44	M/H
Q3.9 I can perform the basic nursing care to the patients (e.g. bed bath and oral hygiene).	3.82/4.45 (1.3/0.8)	14.05, 4, .001 Cramer’s V=.34	H/H
Q3.10 I am capable to perform blood transfusion.	3.32/3.47 (1.3/1.3)	4.98, 4, .29	M/H
Q3.11 I am capable to insert nasogastric tube (NGT).	3.07/3.45 (1.3/1.2)	7.2, 4, .13	M/H
Q3.12 Have you attended any nursing training in the last 2 years?	3.03/3.08 (1.4/1.3)	1.55, 4, .81	M/M
Q3.13 I think I need to attend more educational workshops to enhance my professional and technical knowledge of nursing.	4.40/4.30 (0.9/0.9)	2.78, 4, .59	H/H
Weighted mean (SD) for all questions of section II	3.52/3.84 (0.5/0.7)	44.50, 33, .49	H/H

Note: Responses mean (SD) for A and B hospitals, chi-square test, Italic bold indicate statistical significance of p<0.05, and level of response where, 3.40-5.00 indicates high (H), 2.60-3.39 indicates moderate (M), and 1.00-2.59 indicates low (L).

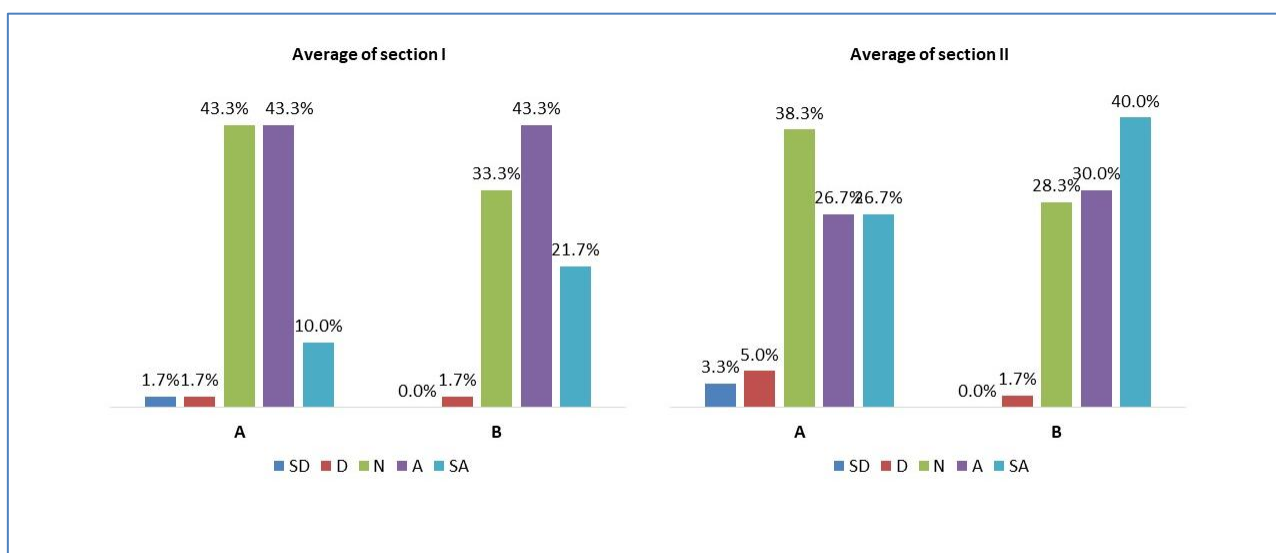


Fig-1: Average of responses of section I and section II, for the five Likert scale of hospital A (specialized) and hospital B (General). Overall average (SD) 3.50 (0.5), 3.62 (0.5) and 3.52 (0.5), 3.84 (0.7) respectively

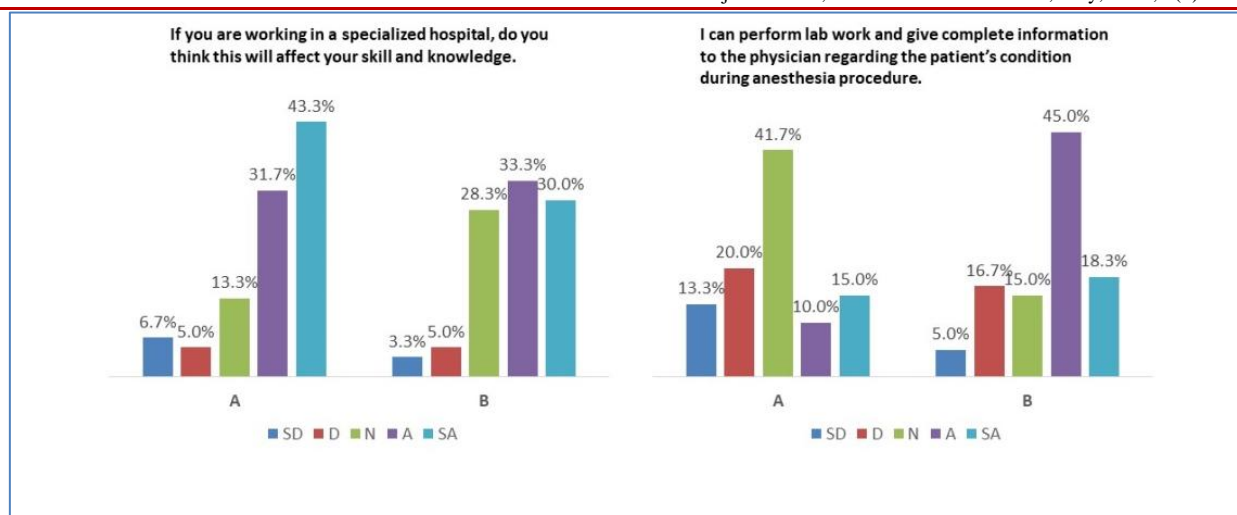


Fig-2: Q2.9 The key question of the study if working in a specialized hospital will affect skills, knowledge, and **Q3.5** for ability to perform lab work where statistical differences found between the two hospitals.

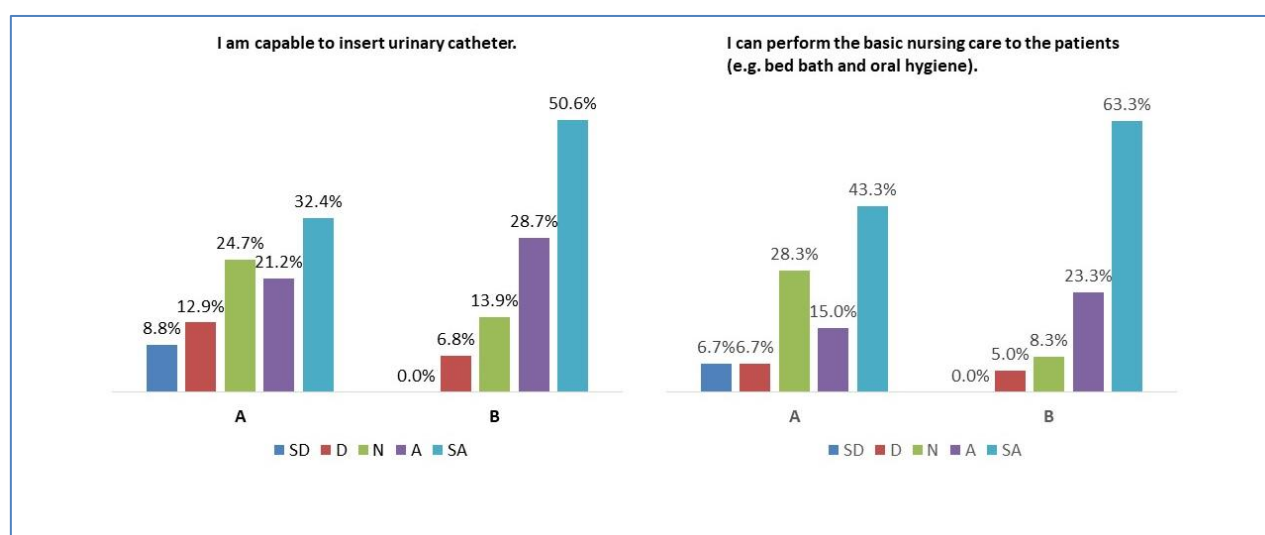


Fig-3: Q3.8 and Q3.9 'capability to insert urinary catheter, and ability to perform basic nursing care respectively. Note; both have statistical significant difference between the two hospitals

DISCUSSION

Nursing services are one of the important health care in the entire medical system, where nurses follow physician's orders and perform many clinical procedures. studies have reported an association between the outcome of health care and the quality of nursing contribution [4], continual education and routinely simulation and debriefing condition show high score of significance outcome, especially when nursing procedure or duties are worked in groups [5].

Even though nursing procedures vary from one clinic to other between or within general and specialized clinics, however, basic skills and knowledge of nursing duties should be at the minimum level throughout nursing duties in either hospital, where the common nursing practice should be the same. Nursing procedures are repeated routinely on a daily basis, and it should improve both knowledge and skills over time, however, nursing procedures that are not routinely

practiced for a longer time may affect the knowledge and skills of the staff nursing [6, 7].

Demographic characteristics

The result shows there were no statistical significant different between the two hospitals for all the variables, except for the departments where, hospital A has fewer departments than hospital B.

Section II

Focuses on general nursing duties that measure the knowledge and skills level specialized vs. general hospital. The overall average responses of both hospitals participants were (3.5, 3.62) respectively, this indicates high level of agreement of the questions statement. There was also no statistical significant difference, except for question of 'exposing to work in general hospital in the last two years', however, this could be explained as only 37% of participants of hospital A were exposed two work in general hospital.

The result shows that participants believe they both possess the adequate knowledge and skills required for their duties, Q 2.1 and Q 2.2 (3.87, 3.83), (4.00, 3.97) respectively. However, in performing some specialized procedures, level of skill appear to vary, especially in handling ER cases it is more obvious for the specific and unpracticed nursing procedure, the participant's responses show that nurses who are working in the specialized hospital are uncertain to handle such cases. Even though they have the needed knowledge and skills, the interesting that this is true for both hospitals are in the same direction, Q 2.7 and Q 2.8 (3.10, 3.63), (3.30, 3.35) respectively.

From result, one could infer the importance of the routinely assessing the extent of nursing clinical aspect in the personal level especially in acute care and in the quality of health care service provided, the result also confirm the need to what stated by the national voluntary consensus standards for nursing-sensitive care, nurse staffing and patient care quality and safety [4, 8].

Cross training may help increase confidence and satisfying level and may reduce the number of nurses who are planning to apply to change hospital. Q2.9 (2.10, 3.38) have applied for a transfer, this could be for several reasons as suggested by participants in the note at the end of the questionnaire, for example staff satisfaction and location of the hospital.

Load of nursing duties reported to affect the performance and it may manifest physically in the body parts, musculoskeletal symptoms and back pain. For instance, may cause general pain and fatigue due to the heaviness load of work [9-11], the current study reported Q2.3 (3.80, 3.52) participants of both hospitals are in agreement with this statement, similarly, found that more than 30% of nursing staff are thinking to apply for early retirement especially female staff with average of Q 2.4, (3.10, 2.92). This seems to be due to the nature of work however, those are common nursing practice worldwide, and the load of the duties may vary from hospital to other.

For the differences of duties in working general or specialized hospital, the common answers of the participants thoughts are in the course with that specialized hospital are more affecting in reduce knowledge and skills, Q2.5 (3.98, 3.82) with statistical significance difference, these differences have been investigated, a suggestion to standardize measures for quality of the health care services [11]. American nurses association also started to address the standardization of nursing measures trying to identify potential nurse-sensitive quality indicators [4], that measures were followed up by several trials, all aimed to collect and analyze data that assumed to be related to the associations between the quality and safety of patient care provided and nurse staffing level [12, 13].

Quality of care influenced by individual characteristics, knowledge and experience as well as personal factors like early fatigue for instance, which are vary from one person to other. It may also be affected by the work system [4]. Studies have shown that same nurse may provide different care to patients with similar needs if conditions and work environment changed [4], Q 2.6 (3.48/4.22) both hospitals are agreeing with that. It is a clear consequence of the work environment may affect the quality of services provided and patients care level, consideration to the result advised, again cross training could be the solution [14, 15].

Section II: Measures some of the specific nursing procedures for nurses working in specialized compared to working general hospital.

National quality forum (NQF) initiated the standardization of nursing measures as a part of improving entire health care. This should be via consensus-based standards for quality measurement and public reporting [16, 17]. For performing specialized nursing duties participants, of both hospitals showed they are capable of excellent in many procedures e.g. blood extraction Q 3.1 and feel less confident in doing others e.g. participating in treatment plan Q 3.2, (4.32,4.38) and (3.93,3.98) respectively. However, there were no statistical differences; yet again, this could be because there is a variation of the nursing duties that are different from hospital to other.

Some other procedure confidence may vary e.g. writing complete lab work Q 3.5 (2.93, 3.55). Reasons behind that could be lab work is not a routine duty in hospital A. Moreover, they mainly deal with specialized procedures. The nurse scholar programs are aware of those differences and are trying to close the gap and improve quality through evidence-based practice and informatics [18], a course of quality and safety education for nurses is implemented in nursing school to reframing the fundamentals of nursing essential to prepare the new graduates [19].

Continual education and practicing nursing audit is an important tool to improve nursing practice. In order to show improvement, nurses must demonstrate competencies in using IT services [20] and to keep a record of progress, surprisingly result of the current study shows no differences between the two hospitals with high response Q3.6 (3.55, 3.27) with 50.0% ability to perform research; this is a good sign of nursing level in both hospitals. It worth to mention that satisfaction surveys required by CIBAHU [21] and/or hospital policy is performed routinely in all hospitals. Participants note at the end of the questionnaire, shows numerous nurses are requesting to attend more training courses to improve their quality of work; this is an evidence of the

highly willing of nurses to improve themselves Q 3.13 (4.40/4.30).

A minimum level of skills and knowledge are required for a working nurse. More than two third of participants reported having the ability to perform any nursing procedures Q 3.7 (3.80/4.00). However, routine evaluation is needed to maintain the standard level, a study of the Italian medical care setting found that some amount of basic and clinically relevant was perceived to be missing [22], revise of basic nursing care is important to ensure of an adequate level [23]. The result of this study shows a variable level of ability to perform specialized nursing procedures, hospital A as a specialized hospital gives the impression to be more or less different confident level in performing some procedures Q3.9, Q3.9 (2.83, 3.95) (3.83, 4.45) respectively. Even though there was no statistically significant difference between the two hospitals, that is may be due to the bedridden is not in the scope of hospital for instance scope of hospital a services, handling and performing the special basic care needs to revisit routinely.

The result of the current study should be taken as an indication and the highlight not necessarily represent true lack, and it may occur in almost all hospitals even though they are following the standard level of nursing practice, other worldwide studies found similar result [22, 24, 25].

LIMITATION

The study was a survey not one to one interview. This is a pilot study, large sample size, for better reliability and accuracy advised.

CONCLUSION

Nursing staff in both hospitals showed having more than the required level of knowledge and skills to provide optimum care however, continual cross training directed.

RECOMMENDATIONS

Even though the recommendations and implication below routinely performed in both hospitals however, highlighting them for more improvement as per nurses' notes at the end of the questionnaire and the study conclusion.

- Cross training generally, and in some specific nursing procedures, regardless of the working hospital.
- Continual training programs related to basic general nursing practice advised.
- All nursing staff has to finish the general competency at the end of each year under the supervision of educational department.

- CBAHI standards state all nursing staff working outside their field should have a general competency program.

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