

Effectiveness of Educational Program for Nurses regarding Accreditation Standards of Family Health Centers

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Abstract

Background: Accreditation programs affect the positive performance of family health centers in different areas. Family healthcare services are crucial to early diagnosis and delivering preventive, curative, and palliative care across the life course. **Aim of the study:** It was to assess the effectiveness of educational program for nurses regarding accreditation standards of family health centers. **Subjects and Method: Design:** A quasi-experimental design was used. **Setting:** The study was conducted at Bettena and Damro family health centers at El-Mahala El-Kobra, which are affiliated with Ministry of Health and Population. **Subjects:** It consisted of all nurses (82 nurses) from two family health centers. **Tools:** Three tools was used: Monitoring checklist about accreditation standards for family health centers, Knowledge structured questionnaire, and Observational checklist. **Results:** The majority (91.5% & 92.7%) of nurses had a good level of knowledge immediately post-program and a satisfactory performance post three months of the program regarding accreditation standards, respectively. **Conclusion:** There was a statistically significant correlation between nurses' overall knowledge and their overall performance about accreditation standards of family health centers pre- and post-program. **Recommendations:** Family health centers managers need to maintain periodic educational training programs for nurses in order to improve their knowledge and skills about the accreditation standards of family health centers.

Keywords: Accreditation, Family Health Centers, Nurses, Standards.

Introduction

Improving the quality of health care services and accreditation are prime goals of health sector reform program in Egypt (El-Shal, Cubi-Molla & Jofre-Bonet 2021). A family health model that is designed to both prevent and treat the most prevalent health problems in the Egyptian population and described as a program aims to enable the Egyptian health system to deliver holistic family health care, which is provided as a "basic benefit

package" (Shehata, Ibrahim, Lassy, & Eldemrdash, 2023). The package includes services for maternal and child health, family planning services, preventive services and vaccinations, diagnosis and follow-up of non-communicable disease, simple mental health interventions, and basic curative and surgical procedures (Abd El Fatah et al., 2019).

The family health model strengthens the existing primary health care services delivery system through family health centers (**El Rabbat & Bossert, 2020**). The family health centers oversee, and plan programs and healthcare services related to disease prevention as well as health promotion for all families members, including mothers, young children, adolescents, women of childbearing age, and infants (**Abd EL-Aaty, Hosein, Sharkawy, & Amin, 2019**).

Family health nurses are recommended by the World Health Organization's frameworks as a reliable community-level point of contact for the populace. They provide direct assistance to individuals in their homes or communities, enhancing the continuity of care, implementing preventive measures at all levels, and placing a critical emphasis on addressing social health determinants. Contributions to policy planning and resources management, as well as supporting access to and appropriate use of health care services, are the responsibility of family health nurses (**Gasparini et al., 2023**). Several common standards have been developed for detection of the family community nurses' roles in primary healthcare practice. In one of its reports, World Health Organization highlighted the importance of nurses training, emphasizing the contribution made by the nursing profession and confirming that investing it as a benefit to society rather than a cost (**Sánchez-Muñoz et al., 2023**).

Accreditation is an external evaluation form of health care facilities that is used for improving the quality of care; describe an external assessment against predetermined standards. Using standardized qualitative and quantitative metrics to evaluate, recommend improvements, and report levels

of quality, from clinical and organizational perspectives (**World Health Organization, 2022**).

Accreditation of family health centers is based on certain standards including patients' rights, patients' care, safety of family health center, management of the facility, management of the support services, management of the information system, quality improvement program and the family practice (**El-Shal et al., 2021**). Patient's rights are one of the most important factors in healthcare accreditation. Patient's rights are a comprehensive statement that helps patients understand their rights and responsibilities (**El-Shimy, Mostafa, & Hamedy, 2020**). Patients care includes whether patients receive appropriate care; appropriate assessment and diagnosis, treatment, counseling and patients follow-up (**Green, 2021**).

Safety in family health centers refers to minimizing potential risks for patients, staff, and building compliance with policies and regulations for providing a safe and secure work environment. Also, it includes training staff in accident response and prevention, emergency preparedness and the use of protective equipment and clothing (**The General Authority for Healthcare Accreditation & Regulation, 2021**).

Healthcare facility management directly undertakes responsibility for healthcare services, material supply, spatial safety of the facility, structural maintenance and operation needs of the facility, maintenance and operation of medical devices, financial and accounting management, if necessary, space comfort, satisfaction of employees and patients, and many more (**Lavy & Terzioğlu, 2023**).

Standards of support services contain family health centers' compliance with a wide range of functional and structural standards in support services (NSW, 2021). Management of information system integrates data collection, processing, reporting and facilitation at all levels to improve health service effectiveness and efficiency in response which contains statistics on health services, disease epidemiology, and administration (Rumisha et al., 2020).

Quality improvement is the combination of a change (improvement), a method (a systematic approach aided by appropriate tools) and a context (the environment in which the improvement is made) in order to achieve better outcomes (Russ et al., 2023). The family practice model revised the basic package of integrated services in family health care facilities (El Rabbat & Bossert, 2020).

Significance of the study

The quality directorate established a comprehensive program to enhance quality through designing and implementing an accreditation system (Salah & Kidd, 2019). It is noted in the context of nurses' work, there are studies on their role in management systems and/or systemic organizational tools, with a focus on improving care, such as accreditation, which is important and necessary to favor their functional delineation in a clear way (Trisno, Putra, & Purwanza, 2019). The aim of this study is to assess the effectiveness of educational programs for nurses regarding accreditation standards of family health centers.

Aim of the study

Assess effectiveness of educational program for nurses regarding accreditation standards of family health centers.

Research hypothesis:

Implementation of educational program is expected to improve knowledge and skills for nurses about accreditation standards of family health centers.

Subjects and Method

Design:

A quasi-experimental design was used to achieve the aim of the present study.

Setting:

The present study was conducted at family health centers at El-Mahala El-Kobra (Bettana and Damro Family Health Centers), which are affiliated with the Ministry of Health and Population. Bettana and Damro Family Health Centers provide different community services.

Subjects:

All nurses (82 nurses) from the two family health centers were available at the time of data collection included in the study. Bettana Family Health Center (52 nurses) and Damro Family Health Center (30 nurses).

Tools of the study:

To fulfill the aim of this study three tools were used:

Tool I: Monitoring Checklist about Accreditation Standards for Family Health Centers.

The investigator designed the data collection tool to assess the structural dimensions of accreditation standards based on the model of Ministry of Health and Population for accreditation of family health centers (Ministry of Health and Population, Accreditation Committee for Healthcare Organizations, 2017; General Authority for Healthcare Accreditation and Regulation, 2019), and recent related literatures (Abdel-Razik et al., 2012; Farahat, Alkot, Khalil, & Fouada, 2016). The checklist consisted of 81 items and was divided into five dimensions:

management of the facility, management of support services (emergency room standards), management of information, quality improvement and family practice model.

Scoring system:

The nurses' responses were measured in a three points Likert Scales ranging from 3-1. The scales changed according to jury opinions as present (3), partial present (2), not present (1), and un-applicable was scored (0). The total scores were classified into levels according to the cutoff points as: satisfactory standard for $\geq 80\%$ and unsatisfactory standard for $< 80\%$.

Tool II: Knowledge Structured Questionnaire about Accreditation Standards for Family Health Centers:

This tool was developed by the investigator guided by El-Jardali et al., (2014); Salah & Kidd, (2019) to assess nurses' knowledge about accreditation standards for family health centers. It included two parts: **Part 1:** Personal characteristics of nurses. It included family health center name, working department, age, educational qualification, years of experience in nursing, and attendance at training courses about accreditation standards of family health centers. **Part 2:** Nurses' knowledge structured questionnaire about accreditation standards for family health centers. It consisted of 63 questions in the form of multiple choice, true or false and Mach. These questions covered the following items: concept of accreditation, benefits, the effect of accreditation on nurses and patients; patients' rights; patients' care; safety of family health center; management of the facility; management of support services; management of information; quality improvement; and family practice model.

Scoring system: Nurses' responses to questions were granted one point for the correct answer, and zero for the wrong one. Total scores were classified according to the cutoff points into three levels: Good level of nurses' knowledge $\geq 75\%$, Fair level of nurses' knowledge $< 75-60$ and Poor level of nurses' knowledge $< 60\%$.

Tool III: Observational Checklist about Accreditation Standards of Family Health Centers Nurses

The investigator of the current study designed the data collection tool to assess nurses' performance regarding the application of the accreditation standards of family health centers based on model of the Ministry of Health and Population for accreditation of family health centers (General authority for healthcare accreditation and regulation, 2019; Ministry of Health and Population, accreditation committee for healthcare organizations, 2017) and recent related literatures (Abdel-Razik et al., 2012; Farahat et al., 2016). The observational checklist consisted of 208 items divided into the following dimensions: patient rights standards, patient care standards which divided into six subscales as follows: general clinical area standards, antenatal care standards, hypertension care standards, diabetes care standards, integrated management of child standards, immunization standards, and family planning standards. Also, safety standards are divided into environmental safety standards and clinical safety standards which are divided into sterilization and infection control standards.

Scoring system:

The nurses' performance was measured on a three points Likert Scales ranging from 3-1 as full done (3), partial done (2), not done (1), and un-applicable will be scored (0).

Total scores were classified into levels according to the cutoff points as: satisfactory nurses' performance ≥ 80 %, and unsatisfactory nurses' performance < 80 .

Methods:

Ethical considerations:

- Approval from the Scientific Research Ethical Nursing Committee at Faculty of Nursing was obtained with no 299-9-2023.

An official permission to conduct the study was obtained from the responsible authorities of Faculty of Nursing to Health Affairs Directorate who were informed about the study objectives and permission was taken to attain approval and assistance in data collection in the selected setting.

- An informed consent was obtained from the Family Health Centers' nurses in the study including the right to withdraw from the study at any time if they wanted.

- Assure the participants about their privacy and confidentiality of the obtained data, and it was used only for the purpose of the study.

- The study didn't cause any harm for the participants.

- **Data collected** was collected by the researcher. The researcher met staff nurses individually at their work setting to distribute the tools. The questionnaire was completed in the presence of the researcher to ascertain all questions were answered. The questionnaire sheets took 35-45 minutes for each staff nurse to fill out. The data collection started from January 2022 and lasted 11 months till November 2022.

The educational program for family health centers' nurses regarding accreditation standards of family health centers conducted in four phases. The aim of the educational program was to assess the effectiveness of the educational program for nurses regarding accreditation standards of family health centers. The program contents were

including nine sessions under nine topics as follow: concept, benefits, and the effect of accreditation on nurses and patient, patient's rights, patient care, safety in family health center, management of the facility, management of support services, management of information, quality improvement and family practice model.

The methods used in teaching of the program were lectures, case study, storytelling, role play and group discussion. Data collection phase: the investigator met nurses in their workplace at El-Mahala El-Kobra (Bettana and Damro Family Health Centers). Family health centers nurses (82 nurses) were divided into 8 groups; five groups in Bettana Family Health Center and three groups in Damro Family Health Center. The program duration was 9 hours for each group (one hr. / day/ 9days/ 4 times weekly)

Validity and reliability:

- The tools were developed and translated into Arabic and presented to a jury of seven experts in the area of specialty to check the content validity of each tool item. The seven experts.

Necessary modifications were made, including clarification, omission of certain questions and adding others and simplifying work related words.

-Opinions of experts on tools of the study were analyzed statistically. The content validity index was (99.0%, 99.3% and 98.5%) for tools I, II, and III respectively.

Pilot study:

A pilot study was carried out on 10% of nurses (n=10 nurses). The aim of pilot study was to test the clarity, applicability, and relevance of the tools' items. Also, to identify any obstacles that may be encountered during data collection. The pilot study also served to estimate the time required for filling the questionnaire sheet from nurses.

The estimated time needed to fulfill the knowledge structured questionnaire tool was approximately 35-45 minutes for tool II.

Results

Table 1: Denotes family health centers nurses' personal characteristics. The results revealed that more than one fifth (22.0%) of both centers' nurses were working in the antenatal care department. As for age, more than half (57.3%) of both centers' nurses were in the age group 45-<55 years old with the mean age 47.94 ± 6.04 . Concerning nurses' educational qualification, the majority (81.7%) of both centers' nurses had diploma nursing degree and more than one third (45.1%) of them had >30 years of experience in nursing and around two thirds (64.6%) of both centers' nurses didn't attend any training about accreditation standards about family health centers.

Concerning Damro and Bettena family health centers, regarding the nurses' age, it was found that more than two fifths (43.3%) and around two thirds (65.4%) of nurses were in the age group 45-<55 years at Damro and Bettena centers, respectively. Additionally, nurses' level of educational qualification, more than two fifth (43.3%) of Damro center nurses had a Bachelor of Nursing, compared to none of Bettena center nurses had a Bachelor of Nursing. Finally, the table reveals that more than two fifths (43.3%) of nurses at Damro center while more than thirty (30.8%) of nurses at Bettena center attended previous training about accreditation standards.

Figure 1: Shows levels of family health centers nurses' total knowledge about accreditation standards pre and immediately post-program. Less than half (48.8%) of both centers' nurses had poor total knowledge level preprogram but the majority (91.5%) of them had good level of total knowledge

regarding accreditation standards immediately post-program.

According to Damro family health center, over one third (40%) of nurses had a poor total knowledge level preprogram, moreover all of them had a good total knowledge level immediately post-program. Regarding Bettena family health center, above half (53.8%) of nurses had a poor total knowledge level preprogram while high percent (86.5%) of them had a good total knowledge level immediately post-program.

Figure 2: Shows family health center nurses' total performance levels toward accreditation standards pre and post 3 months of the program. Regarding preprogram, around half (50%) of both family health centers' nurses had an unsatisfactory performance toward the accreditation standards but the majority (92.7%) of them had a satisfactory performance at post 3 months of the program.

Regarding Damro family health center, more than one-third (36.7%) of nurses had an unsatisfactory total performance preprogram. While post 3 months of the program, all (100 %) of nurses had satisfactory total performance toward accreditation standards. Concerning Bettena family health center, more than one half (57.7%) of nurses had unsatisfactory total performance preprogram. During the post 3 months of the program, the majority (88.5 %) of nurses had satisfactory total performance toward accreditation standards.

Table 2: Illustrates the levels of family health centers' nurses' performance according to accreditation standards dimensions pre and post 3 months of the program. The table notes that, preprogram, above two fifth (43.9%, 45.1%, and 47.2%) of overall nurses' performance in both

centers had unsatisfactory performance regarding patients' rights', safety of family health center and patients' care dimensions respectively, which improved to be the majority (91.5%, 92.7% and 90.6%) of overall nurses' performance in both centers had satisfactory performance post-3 months of the program respectively.

Table 3: Illustrates levels of family health centers monitoring of structural dimensions of accreditation standards for family health centers. Around half (51.56%) of structural overall accreditation standards at Damro family health center weren't fulfilled (unsatisfactory level). Concerning Bettena family health centers, around two thirds (64.84%) of structural overall accreditation standards weren't fulfilled (unsatisfactory level).

Figure 3: Demonstrates correlation between nurses' overall knowledge and nurses' overall observed performance regarding accreditation standards of family health centers preprogram. The figure denotes that preprogram, there was a statistically significant correlation between nurses' overall knowledge and their overall observed performance about accreditation standards of family health centers ($r = 0.319$).

Figure 4: Displays correlation between nurses' overall knowledge and nurses' overall observed performance regarding accreditation standards of family health centers post-program. The figure denoted that post-program, there was a statistically significant correlation between nurses' overall knowledge and their overall observed performance about accreditation standards of family health centers ($r = 0.844$).

Table (1): Family health centers nurses' personal characteristics (n = 82)

Nurses' personal characteristics	Damro center (n = 30)		Bettana center (n = 52)		Total (n=82)	
	No.	%	No.	%	N0.	%
Department						
Emergency	4	13.3	3	5.8	7	8.5
Immunization	4	13.3	5	9.6	9	11.0
Antenatal care	6	20.0	12	23.1	18	22.0
Sterilization	3	10.0	2	3.8	5	6.1
Family planning	3	10.0	5	9.6	8	9.8
Dental	2	6.7	3	5.8	5	6.1
Youth and adolescence	0	0.0	1	1.9	1	1.2
Childcare	2	6.7	3	5.8	5	6.1
Out patients clinic	1	3.3	5	9.6	6	7.3
Health Teaching	2	6.7	0	0.0	2	2.4
Solidarity and dignity	0	0.0	4	7.7	4	4.9
Infection Control	0	0.0	1	1.9	1	1.2
Folders room	1	3.3	3	5.8	4	4.9
Initiatives	0	0.0	3	5.8	3	3.7
Management	2	6.6	2	3.8	4	4.8
Age						
<45	12	40.0	11	21.2	23	28.0
45-<55	13	43.3	34	65.4	47	57.3
≥55	5	16.7	7	13.5	12	14.6
Min. – Max.	32.0 – 59.0		34.0 – 58.0		32.0 – 59.0	
Mean ± SD.	47.67 ± 7.04		48.10 ± 5.44		47.94 ± 6.04	
Median	48.50		49.0		49.0	
Educational qualification						
Diploma nursing degree	16	53.3	51	98.1	67	81.7
Associate diploma degree of nursing	1	3.3	1	1.9	2	2.4
Bachelor of nursing	13	43.3	0	0.0	13	15.9
Years of experience in nursing						
10+	6	20.0	6	11.5	12	14.6
20+	11	36.7	22	42.3	33	40.2
30+	13	43.3	24	46.2	37	45.1
Training course on accreditation						
No	17	56.7	36	69.2	53	64.6
Yes	13	43.3	16	30.8	29	35.4

SD: Standard deviation

t: Student t-test

 χ^2 : Chi square test

MC: Monte Carlo

FE: Fisher Exact

p: p value for comparing between the two studied center

*: Statistically significant at $p \leq 0.05$

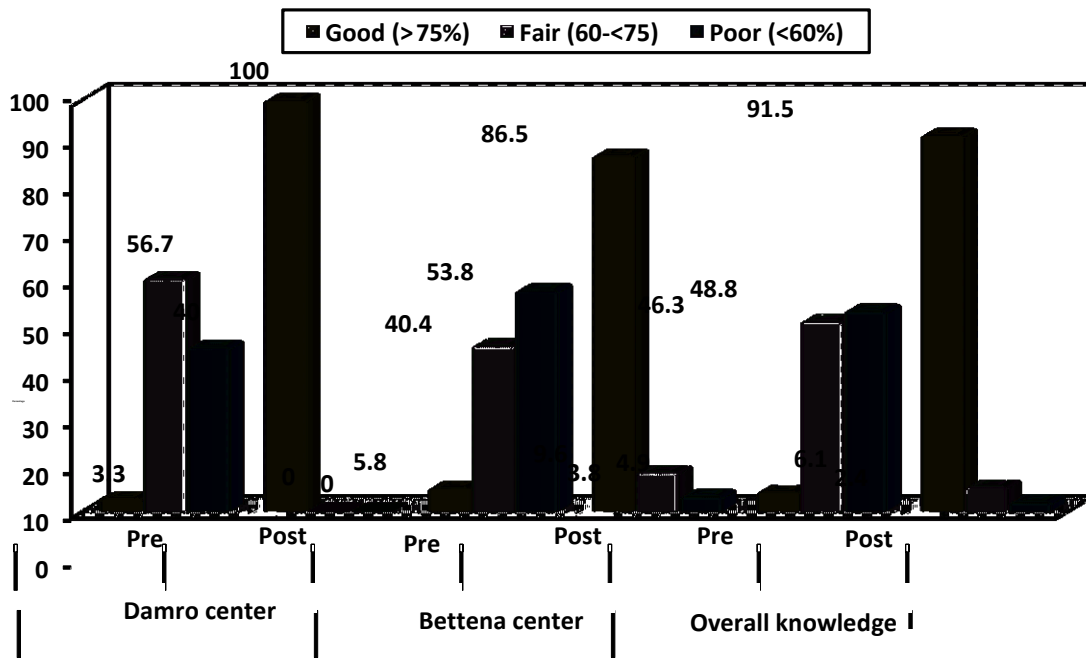


Figure (1): Levels of family health centers nurses' total knowledge about accreditation standards pre and immediately post-program (n=82)

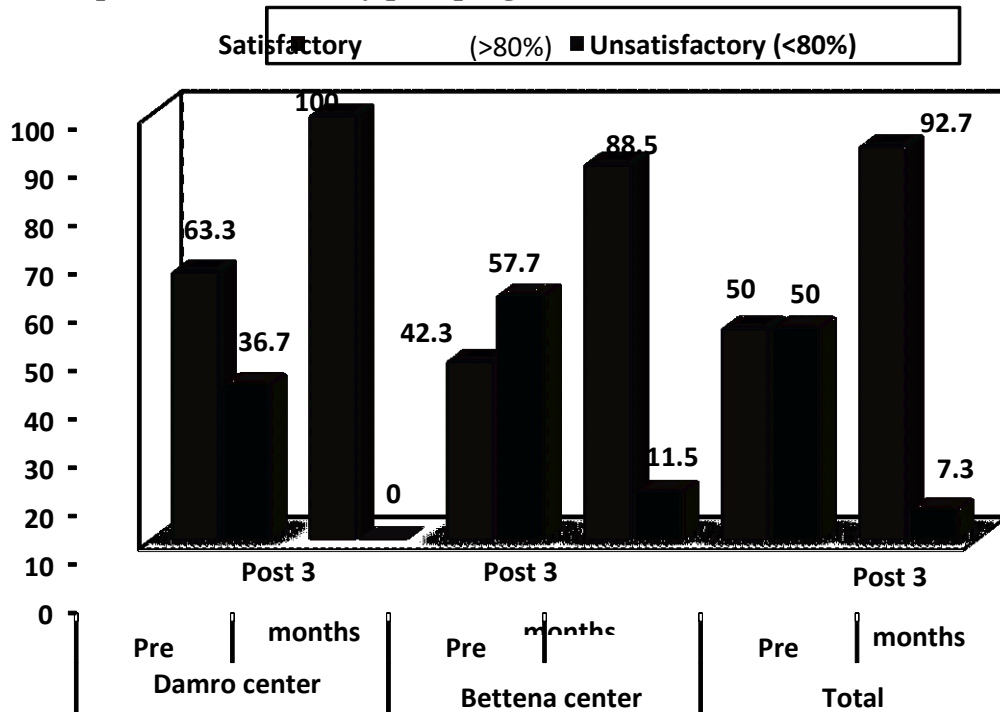


Figure (2): Family health center nurses' total performance levels toward accreditation standards pre and post 3 months of the program (n=82)

Table (2): Levels of family health centers' nurses' performance according to accreditation standards dimensions pre and post 3 months of the program (n = 82)

Accreditation standards dimensions	Damro center (n = 30)				Bettana center (n = 52)				Overall (n = 82)			
	Pre		Post 3 months		Pre		Post 3 months		Pre		Post 3 months	
	Satisfactory %	Unsatisfactory %	Satisfactory %	Unsatisfactory %	Satisfactory %	Unsatisfactory %	Satisfactory %	Unsatisfactory %	Satisfactory %	Unsatisfactory %	Satisfactory %	Unsatisfactory %
Patients' right for information	70.0	30.0	96.7	3.3	46.2	53.8	88.5	11.5	54.9	45.1	91.5	8.5
Rights are communicate	56.7	43.3	93.3	6.7	59.6	40.4	92.3	7.7	58.5	41.5	92.7	7.3
Right to complain	80.0	20.0	100.0	0.0	44.2	55.8	86.5	13.5	57.3	42.7	91.5	8.5
Right to satisfaction	76.7	23.3	93.3	6.7	50.0	50.0	92.3	7.7	59.8	40.2	92.7	7.3
Confidentiality	70.0	30.0	100.0	0.0	48.1	51.9	88.5	11.5	56.1	43.9	92.7	7.3
Total patients' rights	73.3	26.7	96.7	3.3	46.2	53.8	88.5	11.5	56.1	43.9	91.5	8.5
General clinical area	80.0	20.0	100.0	0.0	37.5	62.5	87.5	12.5	53.8	46.2	92.3	7.7
Antenatal care	50.0	50.0	100.0	0.0	58.3	41.7	91.7	8.3	55.6	44.4	94.4	5.6
Hypertension care	100.0	0.0	100.0	0.0	40.0	60.0	80.0	20.0	50.0	50.0	83.3	16.7
Diabetes care	100.0	0.0	100.0	0.0	40.0	60.0	100.0	0.0	50.0	50.0	83.3	16.7
Integrated Management of Child Illness care	0.0	100.0	100.0	0.0	66.7	33.3	66.7	33.3	40.0	60.0	80.0	20.0
Immunization	50.0	50.0	100.0	0.0	60.0	40.0	80.0	20.0	55.6	44.4	88.9	11.1
Family planning	33.3	66.7	100.0	0.0	60.0	40.0	80.0	20.0	50.0	50.0	87.5	12.5
Total patients' care	55.0	45.0	100.0	0.0	51.5	48.5	84.8	15.2	52.8	47.2	90.6	9.4
Environmental safety	26.7	73.3	100.0	0.0	65.4	34.6	88.5	11.5	51.2	48.8	92.7	7.3
Sterilization	56.7	43.3	100.0	0.0	51.9	48.1	84.6	15.4	53.7	46.3	90.2	9.8
Infection control	60.0	40.0	100.0	0.0	50.0	50.0	86.5	13.5	53.7	46.3	91.5	8.5
Total safety of family health centers	33.3	66.7	100.0	0.0	67.3	32.7	88.5	11.5	54.9	45.1	92.7	7.3

Table (3): Levels of family health centers monitoring of structural dimensions of accreditation standards for family health centers (n = 82)

Accreditation standards dimensions	Damro center	Bettena center
	Unsatisfactory	Unsatisfactory
I- Management of facility		
Total score	40.0	52.00
% score	33.33%	58.33%
II- Management of support service (Emergency room)		
Total score	28.0	30.0
% score	77.27%	86.36%
III- Management of Information		
Total score	50.0	52.0
% score	69.05%	73.81%
IV- Quality improvement		
Total score	24.0	27.0
% score	50.00%	62.50%
V- Family practice Model		
Total score	28.0	33.0
% score	43.33%	60.0%
Overall		
Total score	185.0	209.0
% score	51.65%	64.84%

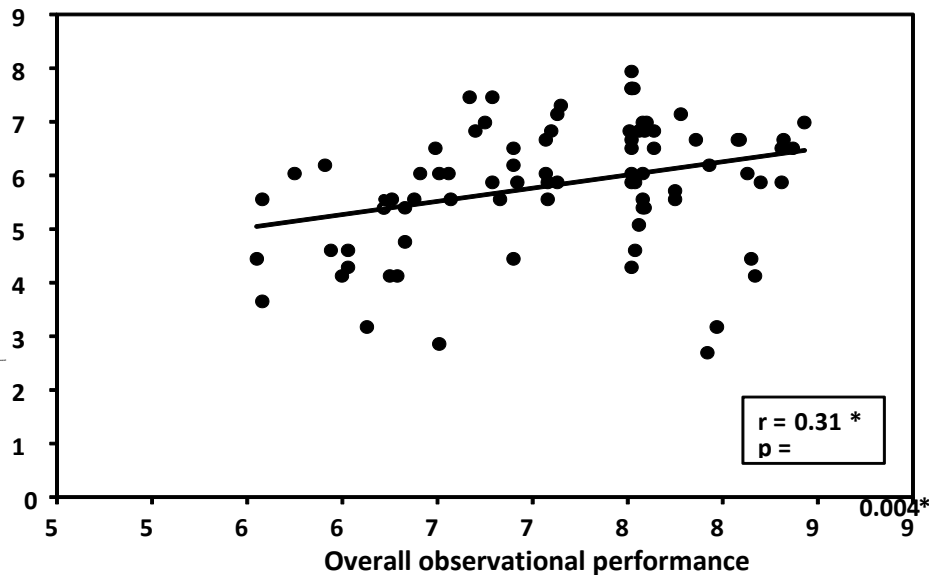


Figure (3): Correlation between nurses' overall knowledge and nurses' overall observed performance regarding accreditation standards of family health centers preprogram (n = 82)

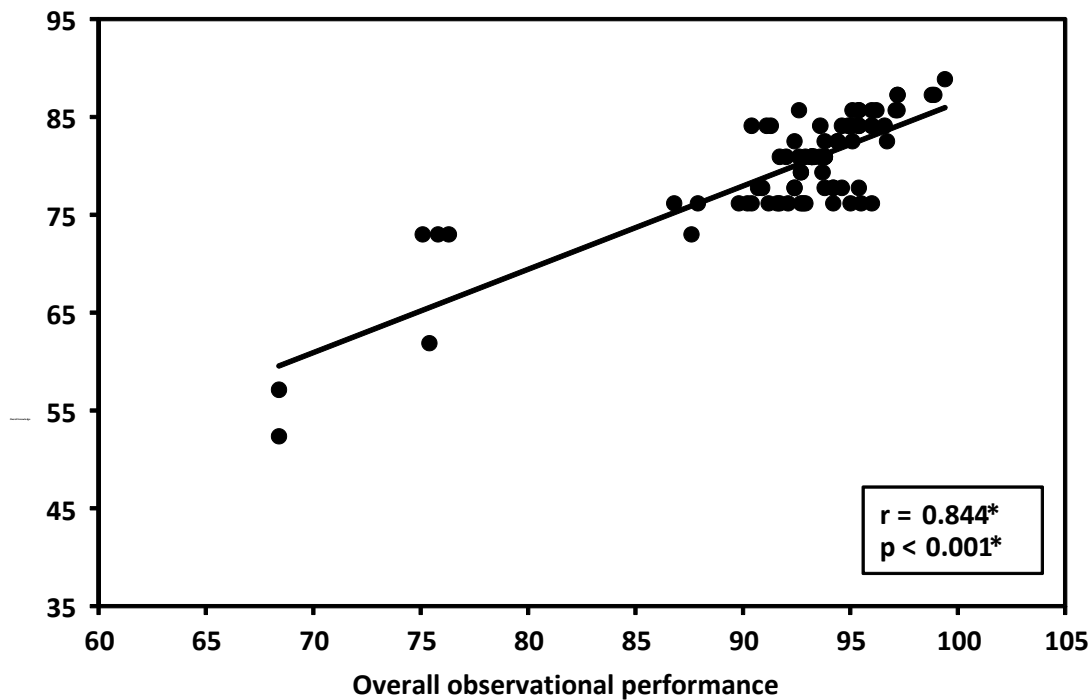


Figure (4): Correlation between nurses' overall knowledge and nurses' overall observed performance regarding accreditation standards of family health centers post-program (n = 82)

Discussion

Health Sector Reform shifts the emphasis of healthcare from vertical programs and institutional care to a more integrated, cheaper, high-quality, universally available and sustainable primary care model, that aims to both prevent and treat the most common health problems of the Egyptian population (**Shehata et al., 2023**).

Accreditation programs affect positively the performance of family health centers in different domains including quality, effectiveness, the human resource as well as strategic management. In addition, the accreditation program has positive effects on patients' satisfaction, safety, and improve accessibility and continuity of care (**Tabrizi et al., 2023**). So, this study aimed to assess effectiveness of educational program for nurses regarding accreditation standards of family health centers.

Nurses' knowledge toward family health centers accreditation standards

The current study's findings show that less than half of family health centers' nurses had a poor level of overall knowledge regarding accreditation standards preprogram. This result might be due to lack of in-service training programs where only around one-third of them attended training courses.

This result is consistent with the findings of **El-Gendy, Eid, & Abd El Azeem, (2021)**, who discovered that nursing staff had a low level of awareness regarding accreditation. Furthermore, **Kapurkar, Jagadale, & Babar, (2021)** noted that preprograms for staff nurses had a low level of knowledge about national accreditation standards.

The present study demonstrated that, while the preprogram around half of family health centers' nurses had a poor level of knowledge, the majority of family health centers' nurses had good level of knowledge

about accreditation standards immediately post-program, that can be rationalized by the effect of the educational program on nurses' knowledge and the nurse managers motivate them to learn more about accreditation standards.

This result was confirmed by **Alhaleel (2018)** who stated that education was a crucial part of any recently implemented intervention and was closely related to the success of healthcare organization's accreditation and survey experience. Implementing accrediting programs successfully was shown to be significantly dependent on staff training in quality improvement. This finding agreed with the result of a study conducted by **Andri & Soewondo (2018)**, which argued that staff nurses' knowledge was high level through educational programs conducted throughout healthcare centers.

Nurses' performance in relation to accreditation standards for family health centers

The current study showed that half of family health centers' nurses had an unsatisfactory level of total performance about accreditation standards before implementation of the program, while the majority of the total nurses in both family health centers had improved to satisfactory level of total performance after three months of the program. This finding can be explained that nurses especially in Damro family health center had the lowest mean score of their performance regarding integrated management of child illness and safety of family health centers, while Bettena family health center had the lowest mean score of their performance regarding hypertension care and patients' right for information preprogram. Those nurses' performance improved for the post three

months of the program. **Shaker, Abdelhady, & Faltas, (2020)** corroborated the results of this study, which showed a statistically significant increase in the mean nurses' total practice after the implementation of the training program.

Regarding patients' rights standards dimension pre and post three months of the program; the findings of this study revealed that, preprogram, above two-fifths of overall nurses' performance in both centers had an unsatisfactory performance regarding patients' rights' which improved to the majority of nurses had a satisfactory performance post three months of the program. These results may be attributed to a lack of nurses' awareness towards patient's rights.

This result is congruent with **Youssef, Shabaan, Abo Gad & Abo Ramadan, (2022)** study which revealed that nurses had an unsatisfactory level of total practice for patients' rights preprogram which reflected on their demand for training program to explain necessary information and train them for application of patients' rights. Also, **Fouad, Abdelrahman & Mohamed, (2020)** agree with the present finding, which found that more than half of staff nurses had a high level of compliance toward patients' rights, in the three times of observation. The results of this study contradicted with **Yousef & Abed (2021)** revealed that a high percentage of nurses had high level of compliance toward patients' rights.

Regarding patients' care standards dimension, the foregoing findings of the present study indicates that preprogram, above two-fifths of overall nurses' performance in both centers had an unsatisfactory performance regarding patients' care dimension. This might be due to insufficient guidance and supervision, and

lack of guidance and direction of family health centers nurses regarding care standards for patients in family health centers. While, after three months of educational program, the majority of overall nurses' performance in both centers had a satisfactory performance post three months of the program there was improvement, as majority of total nurses had a satisfactory performance regarding patients' care dimension.

The present findings are consistent with **El-Sayed, Eid & Rashad, (2021)** stated that the majority of nurses had an unsatisfactory practice level with a low total mean score before nursing care standards implementation. While, after implementing a designed nursing care standard was high improvement in nurses' satisfaction. The result in preprogram disagree with **Shehata et al., (2023)** whose revealed that the family health centers had the highest mean score related to provision of services especially for maternity care, family planning and childcare.

Concerning the findings of the present study about safety of family health center dimension, present study results illustrate that preprogram, above two-fifths of overall nurses' performance in both centers had an unsatisfactory performance regarding safety of family health center which improved to be the majority of overall nurses' performance in both centers had a satisfactory performance post three months of the program. These results can be rationalized by above three-quarters of both family health centers' nurses had a poor knowledge level regarding safety subscale at preprogram.

Preprogram results are incongruent with **Andrawes, Fakhry & Abd El Azeem, (2019)** who confirmed that the majority of the nurses had an adequate total compliance

with patient safety standards. Also, **El Shafei & Zayed (2019)** study disagrees with the present study result who noted that none of the nurses had a positive attitude in safety climate.

Monitoring family health centers about structural dimensions of accreditation standards

In relation to levels of family health centers monitoring of structural dimensions of accreditation standards for family health centers, the present results shows that around half of structural overall accreditation standards at Damro family health center weren't fulfilled (unsatisfactory level). Concerning Bettena family health centers, around two-thirds of structural overall accreditation standards weren't fulfilled (unsatisfactory level). These results might be attributed to limited financial resources which were the main challenge delaying the implementation of accreditation program.

Hussein (2023) mentioned that the challenges which facing directors of primary health care centers are mainly financial barriers, limited financial resources caused a delay in hiring expert personnel and purchasing equipment to meet implementation of accreditation standards. The result of the current study is congruent with **Farahat et al., (2016)** who conducted study about compliance of Monshaat Sultan family health center with the current Egyptian primary health care accreditation standards; found that Monshaat Sultan family health center was only third of accreditation standards compliant with current Egyptian primary health care accreditation standards. **Ghareeb, Said, & El Zoghbi, (2018)** agreed with the current study and noted that hospitals which pursuing accreditation showed higher

quality standards compliance rate compared to those hospitals that were not.

Correlation of nurses' knowledge, and nurses' performance pre and post the program

The implementation of the educational program in the present study revealed a statistically significant correlation between nurses' overall knowledge and their overall observed performance about accreditation standards of family health centers pre and post-program. This result confirmed that high levels of knowledge affected positively the levels of performance which interpreted by that knowledge was the base of performance and served important role in performance improvement. This finding agrees with the findings of a study conducted by **Said, Salama & Elbana, (2021)** who showed a statistically significant positive correlation between total knowledge and total practice scores pre and post application of the educational guidelines.

But **Shaker et al., (2020)** confirmed that current study's finding preprogram and disagree with post 3 months of the program result whose study demonstrated that there was a statistically significant positive correlation between both total nurses' knowledge score and practice score before training only, which indicated pre training the increase in knowledge score will be associated with an increase in practice score. Furthermore, no statistically significant correlation between both total knowledge score and practice score post and after one month of training. Also, **Mohamady and Abdel Azeem (2019)** study is congruent with the present study's result which discovered that implementation of the intervention protocol revealed a statistically significant correlation between knowledge and practices.

Conclusion

Based on the findings of the present study, it was concluded that:

The present study concluded that less than half of total family health centers nurses had a poor knowledge level about accreditation standards preprogram. Also, around half of them had unsatisfactory performance toward accreditation standards. On the other hand, the majority of nurses had a good level of knowledge regarding accreditation standards immediately post-program, and a satisfactory performance at post three months of the program. There was statistically significant correlation between nurses' overall knowledge and their overall performance about accreditation standards of family health centers pre and post-program. Post-program, there was statistically significant correlation between overall nurses' performance regarding accreditation standards dimensions and all subscales of nurses' knowledge.

Recommendations

In the light of the findings obtained from the present study, the following was recommended:

For family health centers administration

- Attention to setting clear organizational policies and procedures will assist nurse managers and nurses in understanding the requirements and responsibilities associated with the accreditation program.
- Clarification of the job description and be available for the different categories of nursing personnel to facilitate application of the process of accreditation standards.

For family health centers nurse managers:

- There is a need to design periodic educational training programs to improve nurses' knowledge and performance about

accreditation standards as well as to improve family health centers outcomes.

- There is a need for providing clinical guidelines for nurses based on family health center protocol.

For nursing faculty:

- Accreditation standards program education is a well-defined target for intervention, both in university-based curriculum for future healthcare administrators and in workplace-based programs.
- Nurse educators need to provide a training program about accreditation standards to students to gain knowledge about their roles in accreditation program implementation.

Recommendations for further research:

- Assess the strengths and weaknesses of family health center nurses' performance regarding accreditation standards.

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