

Assessment of Patient Safety in Accredited and Non-Accredited Primary Healthcare Units: A Comparative Study

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Abstract: Background: Attention to patient safety and its effect on both individual patient outcomes, and the healthcare industry as a whole are rendered as one of the most important organizational success in achieving the set goals. So, developing and retaining patient safety policies and procedures is one of the biggest challenges facing health care organizations. Patient safety in primary health care (PHC) units is important for all healthcare providers and patients/ clients of health care organizations, especially staff nurses, where their job performance is affected by them. Aim: Compare patient safety in accredited and non-accredited PHC units, in Housh Isa City, El Beheira Governorate Settings: The study was carried out in all accredited and non-accredited PHC units in Housh Isa City, El Beheira Governorate. It includes 25 PHC units divided into; 18 accredited PHC units, and 7 non-accredited PHC units. Subjects: The sample divided into two groups as follow: 1. The health care providers in the previously mentioned settings were 225 out of 428. It was a total of 162 healthcare providers from accredited PHC units and 63 from non-accredited PHC units. The chosen healthcare providers were selected using the bowl technique. Accordingly, from each PHC unit, two nurses, one physician, one dentist, one pharmacist, one paramedical staff, one housekeeper, one health educator, and one maintenance staff were chosen. 2. Patients/ clients sample size will be 400 out of 42708 by equal allocation 16 patients/ clients from each of 25 PHC units based on the patients/clients visited in the previous 3 months. Tool: One tool was used, The National Safety Requirements (2018) for Units. Results: The study showed that the accredited PHC units had higher total domain (A) the general patient safety standards and domain (D) the environmental safety standards than those of the non-accredited PHC units with a statistically significant difference between them. Conclusion: There was a statistically significant difference between the accredited and non-accredited PHC units concerning the total patient safety standards mean scores. Recommendations: Healthcare providers should follow organizational policies, rules, and regulations regarding patient safety standards. Also, attend specific meetings, workshops, training programs, and seminars held that will help in improving their performance. The healthcare providers' Managers should enhance the healthcare providers' participation in the assessment and evaluation of their PHC unit to identify their defects and to be able to pinpoint issues or concerns to create an action plan for improvement.

Keywords: Healthcare providers, Primary Health Care, Patient Safety, Accreditation.

1. INTRODUCTION

Ensuring patient safety in primary or ambulatory care setting poses a unique challenge for both the health care providers and the patients (Lawati et al., 2018). Patient safety is defined as the prevention of errors and adverse effects to patients associated with health care' and 'to do no harm to patients (World Health Organization, 2019). Failure in PHC contributes

to the burden of unsafe care, half the burden of patient harm originates in primary and ambulatory care, about 80% of that harm can be avoided in PHC settings. It is important to keep patient safe throughout any healthcare setting (World Health Organization, 2017).

Globally, each year millions of patients are suffering from disabilities, injuries, or death as a result of unsafe medical practice, this leading to the wider recognition of the importance of patient safety and to be in the center of the strategic plans of healthcare organizations (Lawati et al., 2018). The medical errors had been reported to be the third leading cause of death, but the frequency and severity in the primary health care settings are unknown, so that all staff must understand their role in prevention. It is estimated that between 5% and 10% of expenditure on health is due to unsafe practices that result in patient harm (Safety, W. P., & World Health Organization, 2010; Gould, 2017). Unsafe care affects around 10% of patients most of it was preventable (Webair et al., 2015).

PHC is defined as an essential care based on practical, scientifically sound and socially acceptable methods and technology. PHC made health care universally accessible and acceptable to individuals, through full participation and at a cost the community and the country can afford. It provides better health services for all (Al-Assaf & Sheikh 2004); Barkley et al., 2020). It has been reported that as many as 20-25% of the general population experience harm in primary care settings in both developing and developed countries. Various factors that contribute towards poor patient safety in PHC settings include errors in communication breakdown, diagnosis, unsafe medication practices and fragmentation of care (Macedo et al., 2020; Lai et al., 2020).

There are a range of strategies are needed that can bring improvement in patient safety in primary care settings; By engaging patients and families, Medication Reconciliation, and Sharing Information. Also, there are four evidence-based strategies that promote meaningful engagement with patients and families in ways that improve patient safety. Be prepared to be engaged, Create a safe medicine list together, Teach-Back, and Warm Handoff Plus (Raimondi et al., 2019; Alboksmaty et al., 2021).

Nurses play a critically important role in ensuring patient safety while providing care directly to patients (Halcomb et al., 2019). Training, education level and clinical experiments are important factors that influence nurses' perceptions of patient safety culture. Nurses' knowledge and perceptions of patient safety culture correlate with the era of hospital accreditation and provide some input for improving the quality of hospital services (Chaneliere, 2018).

Aim of the Study

This study aims to compare patient safety in accredited and non-accredited PHC units, in Housh Isa City, El Beheira Governorate.

Research Question

Is there difference in patient safety between accredited and non-accredited primary healthcare units, in Housh Isa City, at El Beheira Governorate?

2. MATERIALS AND METHOD

Materials

Design: A descriptive comparative research design was used to conduct this study.

Settings: The study was carried out in all accredited and non-accredited PHC units in Housh Isa City, El Beheira Governorate. It includes 25 PHC units divided into; 18 Accredited PHC units namely; Okasha, Harara, Frhash, Elganbiehy, Abo El Shoqaf, El Abqaen, El Kom El Akhader, El Rozimat, Kafr Elwaq, ElQaza, ElQony, Emara, Kobry Abd, Nagieb Mahfoze, Mohamed Refat, Abass El Aqad, Abd Elmonaem Riad, and Maternal and Child Health Center (MCH), And 7 Non-accredited PHC units namely; ELhadad Elbahary, Abo Fereen, Tawfik Elhakeem, Ali Ben Aby Talb, El Sheashaay, Abd Elmegeed Seleem, and El Stomaa.

Subjects: The sample divided into two groups as follow: 1.The health care providers in the previously mentioned settings were 225 out of 428. It was a total of 162 healthcare providers from accredited PHC units and 63 from non-accredited PHC units. The chosen healthcare providers were selected using the bowl technique. Accordingly, from each PHC unit, two nurses, one physician, one dentist, one pharmacist, one paramedical staff, one housekeeper, one health educator, and one

maintenance staff were chosen. 2. Patients/ clients sample size will be 400 out of 42708 by equal allocation 16 patients/ clients from each of 25 PHC units based on the patients/clients visited in the previous 3 months.

Tools: In order to collect the necessary data for the study one tool was used:

The National Safety Requirements (NSR) for Units: This tool was developed by General Authority for Healthcare Accreditation and Regulation (GAHAR) (GAHAR, 2018). This tool was used to assess safety in the PHC units. The tool was classified into four groups (A, B, C, and D) with total of 24 main standards, 40 sub-standards, and 57 items; as follow:

Group A: General Patient Safety Standards, it includes 6 main standards, 5 sub-standards with 10 items. **Group B:** Medication Management Safety Standards, it includes 6 main standards, 5 sub-standards with 10 items. **Group C:** Surgical Procedure Safety Standards, it includes 4 main standards, 3 sub-standards with 6 items. **Group D:** Environmental Safety Standards, it includes 8 main standards, 27 sub-standards with 31 items.

The response was measured on met, partially met, or unmet the higher score was indicate higher patient safety. The score ranges from met =2 to unmet = zero. A unit had to score 80% or more in each group separately and a total of 90% or more in all groups to pass the NSR evaluation.

In addition, a demographic characteristics data sheet of the study subjects was developed, it included questions related to age, gender, educational qualifications, working unit years of nursing experience, years of unit experience, and marital status.

Method

Approval of the ethics committee of the faculty of nursing was obtained. An official approval to conduct this study was obtained after providing explanation of the aim of the study. An informed consent was obtained from the healthcare providers and patients/clients. The study tool was tested for content validity by 5 experts in the field of the study. The necessary modifications were done accordingly. A pilot study was carried out on 10% of the study sample in order to test the clarity and applicability of the research tool. Reliability of the tool was tested using Cronbach's Alpha test. The reliability coefficient was 0.790 which is acceptable.

Data was collected by the researcher during the period from 20/4/2021 to 25/10/2021 each PHC unit took about 2- 3 days. It took a period of slightly more than 6 months. Concurrent audit was utilized for data collection through; reviewing documents, observation, and structured interview according to the standard form.

Ethical considerations:

Written informed consent was obtained from patient after explaining the aim of the study and the right to refuse to participate in the study and/ or withdraw at any time. Patient's/client's privacy was respected. Data confidentiality and anonymity regarding data collection was maintained during implementation of the study.

Statistical Analysis

The collected data were organized, tabulated and statically analyzed using the statistical package for social studies (SPSS) Version 20 Qualitative data were described using number and percent. Statistical analysis tests, which included: X² Chi square test, student T test and ANOVA test.

3. RESULTS

Table 1 revealed the comparison between the studied accredited and non-accredited PHC units according to the mean scores of patient safety standards. It showed that there is a statistically significant difference between the accredited and non-accredited PHC units $t=3.155$, $P=0.004$ in relation to the total patient safety standards mean scores (251.17 ± 14.99 , 227.14 ± 22.00 respectively).

Table 2 illustrates the comparison between the studied accredited and non-accredited PHC units according to the compliance of patient safety standards. It was noticed that all the accredited and non- accredited PHC units were partially met in the total patient safety standards. It showed that all accredited and non-accredited PHC units were partially met in domain A the general patient safety standards. But, all of them were fully met in both domain B the medication safety management and domain C surgical procedure safety standards. On the other hand, all accredited PHC units were fully met in domain D the environmental safety standards, while all non- accredited PHC units were partially met.

Table 3 revealed the relationship between the studied health care providers' demographic characteristics and the mean scores of total patient safety standards in the accredited and non-accredited PHC units at Housh Isa. There is a statistically significant difference between accredited and non-accredited PHC units patient safety standards mean scores in relation to the health care providers' age $t = 11.688$, $P = 0.000$. A statistically significant difference between the accredited and non-accredited PHC units patient safety mean scores in relation to the healthcare providers' gender ($f = 36.694$, $P = 0.000$). A statistically significant difference between them in relation to the healthcare providers' marital status ($t = 23.540$, $P = 0.000$). A statistically significant difference was noticed among the accredited and the non-accredited PHC units' patient safety mean scores in relation to their years of experience since graduation ($t = 10.660$, $P = 0.000$). A statistically significant difference among the accredited and the non-accredited PHC units' patient safety mean scores in relation to their years of experience in the working units ($t = 11.807$, $P = 0.000$).

4. DISCUSSION

This current study is related to the assessment of patient safety in accredited and non-accredited PHC units; comparative study. In this respect, the results of the present study revealed that the relation between the studied accredited and non-accredited PHC units according to the mean scores of patient safety standards has a statistically significant difference between the accredited and non-accredited PHC units in relation to the total patient safety standards mean scores. This may be explained as PHC units with accredited designs applying regulations, and policies related to the general patient safety standards, medication management safety standards, surgical procedure safety standards, and environmental safety standards.

This agreed with (Al Khenizan & Show, 2011) they showed that, accreditation of PHC units has a positive effect on patient safety and the continuation of performance according to the accreditation standards compared with non-accredited PHC units. Also, this agreed with (Al Tehewy et al., 2009) in Egypt, indicating that the accredited units showed a higher degree of compliance with clinical safety standards compared with the non-accredited units. In the same line, (Chaneliere et al., 2018) stated that the accreditation process can reduce the incidence of patient safety incidents at Accredited Public Health Centers as evidenced by the higher frequency of patient safety incidents at non-accredited Public Health Centers. This is because accredited clinic have conducted assessments during the accreditation process, especially in the chapter of Service Quality and Patient Safety which includes responsibility, understanding, measurement, and improvement of clinical service quality and patient safety.

The current study, domain (A) the general patient safety standards, the accredited PHC units had a higher total domain (A) mean scores than those of the non-accredited PHC units, with a statistically significant difference between them. This agreed with a study done by (Saut et al., 2017) in Brazilian healthcare organizations. The results suggest that accreditation contributed to implementing and performing patient safety activities, quality management activities, quality-related policy and strategy planning and involvement of professionals in quality programs.

A higher total domain (B) medication management safety mean scores were found in the accredited PHC units compared to the non-accredited PHC units. This is because the accredited PHC units applying Policy and procedure for medication management safety, abbreviations not to be used throughout the organization, implementing a process to obtain and document a complete list of patient's current medications upon assessment and with the involvement of the patients, labeling all medications, medication containers e.g. syringes, medicine cups, basins or other solutions, and identifying high risk medications, storage and dispensed to assure that risk is minimized.

This agreed with (Alomi et al., 2019); AlKhashan et al., 2021) in the Kingdom of Saudi Arabia, they showed that the medication administration safety was inadequate at non-accredited PHC units while acceptable at accredited PHC units; so targeting drug standardization, storage, and distribution with emphasis on medication device use and monitoring are highly recommended for non-accredited PHCs in the Kingdom of Saudi Arabia. Moreover the accreditation model of the Kingdom of Saudi Arabia, in PHCs uses the consolidated approach and is approved by ISQua, encompasses departmental domains such as laboratory services, radiology, and medication.

According to domain (C) the surgical procedure safety standards, it was the same in both the accredited and non-accredited PHC units; there was no difference between the accredited and the non-accredited primary healthcare units in domain (C) the surgical procedures safety standards mean scores. This is because both following the policy and procedures for surgical

procedures safety, the precise site where the surgery will be performed is clearly marked by the physician with the involvement of the patient, a checklist is developed and used to verify that all documents and equipment needed for surgery or invasive procedure are on hand, correct, and functioning properly before the start of the surgical procedure, and there is a documented process of accurate patient identification preoperatively and just before starting a procedure (time out), to ensure the correct patient, procedure, and body part.

This agreed with (Bernan et al., 1991) who clarified that, surgical errors, many of which are preventable, result in reduced patient safety during perioperative care and while the patient is under the responsibility of the surgical team. Also, (Welch et al., 1998) clarified that, the quality of surgical care is often constrained by lack of trained staff, poor facilities, inadequate technology and limited supplies of drugs and other essential materials. So, the priorities in resource allocation should be on evaluation and implementation of basic measures of hygiene and maintenance of instruments, education and training of nurses and surgeons on safe practices.

According to domain (D) the environmental safety standards in the current study, there is a statistically significant difference between the accredited and the non-accredited PHC units. The accredited PHC units had a higher total domain (D) mean scores than those of the non-accredited PHC units. This is because most of the accredited PHC units have a well-structured, implemented fire and smoke safety plan that address prevention, early detection, response, and safe exit when required by fire or other emergencies, also a well-structured and implemented safety and security plan/s, well-structured and functioning laboratory safety program, a well-structured and implemented plan for selecting, inspecting, maintaining, testing, and safe usage of medical equipment and essential utilities. These measures are perceived to contribute toward better outcomes.

This agreed with (Beaumont, 2002) in Paris, clarified that accreditation was linked to a safer environment for patients and staff, better management in planning and provision of services based on population health needs, evidence-based decision-making, and continuous learning and improvement. In the same line, (Najjar et al., 2013) in Palestine, and (El-Jardali et al., 2014) in Saudi Arabia, a punitive safety environment was reported to be an area for improvement in accredited PHC. The evidence of a correlation between the accreditation status and quality management activities supported the vision of accreditation as an important quality management model. Again, (Sevilla-Zeigen, 2016) illustrated that healthy work environment improves patient safety.

5. CONCLUSION

Based upon the findings of the current study, it could be concluded that there is a statistically significant difference between the accredited and non-accredited PHC units concerning the total patient safety standards mean scores. Regarding domain (A) the general patient safety standards and domain (D) the environmental safety standards, the accredited PHC units had higher total domain than those of the non-accredited PHC units with a statistically significant difference between them. Additionally, there was no difference between the accredited and the non-accredited PHC units in domain (C) the surgical safety procedures standards mean scores.

6. RECOMMENDATIONS

In line with the findings of the study, the following recommendations are made:

I. The PHC unit managers should:

- Develop strategies to improve general patient safety standards through:
 - a- Empower and motivate healthcare providers by increasing financial benefits, rewards, and recognition of their work.
 - b- Contribute to change by creating increased awareness for all healthcare providers to ensure appropriate error-preventing procedures and systems in the healthcare environment.
 - c- Creating an environment that addresses and prevents potential or actual safety problems that can help to reduce the incidence of medical errors by healthcare providers in the workplace.

II. The healthcare providers' Managers:

- 1- Obtaining feedback from healthcare providers and patients/ clients will allow gaining insight into process improvement techniques, improved learning, teamwork, and communication skills in the healthcare system.

2- Enhance the healthcare providers' participation in the assessment and evaluation of their PHC unit to identify their defects and to be able to pinpoint issues or concerns to create an action plan for improvement.

3- Provide opportunities for growth and development of the healthcare providers' abilities, through attaining training programs for general patient safety standards and encouraging self-learning and updating of their knowledge.

III. The healthcare providers should:

1- Attend specific meetings, workshops, training programs, and seminars held that will help in improving their performance.

2- Follow organizational policies, rules, and regulations regarding patient safety standards.

3- Cooperate and communicate openly with each other and with their managers to discuss obstacles that are facing them when applying their work and ways for improvement to achieve a high level of patient safety.

Table (1): Comparison between the studied accredited and non-accredited PHC units according to the mean scores of patient safety standards (n=25 PHC units).

Items	Accredited PHC units (n=18)	Non-accredited PHC units (n=7)	Test of Sig.
	Mean ± SD	Mean ± SD	
A. General Patient Safety Standards	79.50±3.167	75.43±5.912	t=2.247 P=0.034*
B. Medication Management Safety Standards	53.39±2.253	52.86±1.952	t=0.546 P=0.590
C. Surgical Procedure Safety Standards	18.00±0.000	18.00±0.000	NA
D. Environmental Safety Standards	100.28±13.95	80.86±16.69	t=2.963 P=0.007*
Total Patient Safety Standards	251.17±14.99	227.14±22.00	t=3.155 P=0.004*

t = Student T Test * Statistically significant at p ≤ 0.05

NA: Not Applicable; can't make the test of significance because the two is the same.

Table (2): Comparison between the studied accredited and non-accredited PHC units according to the compliance of patient safety standards (n=25 PHC units).

Items	Accredited PHC units (n=18)		Non-accredited PHC units (n=7)		Test of Sig.
	No.	%	No.	%	
A. General Patient Safety Standards					
- Full met	0	0.0	0	0.0	NA
- Partially met	18	100	7	100	
- Not met	0	0.0	0	0.0	
B. Medication Management Safety Standards					
- Full met	18	100	7	100	NA
- Partially met	0	0.0	0	0.0	
- Not met	0	0.0	0	0.0	
C. Surgical Procedure Safety Standards					
- Full met	18	100	7	100	NA
- Partially met	0	0.0	0	0.0	

- Not met	0	0.0	0	0.0	
D. Environmental Safety Standards					
- Full met	18	100	0	0.0	NA
- Partially met	0	0.0	7	100	
- Not met	0	0.0	0	0.0	
Total Patient Safety Standards					
- Full met	0	0.0	0	0.0	NA
- Partially met	18	100	7	100	
- Not met	0	0.0	0	0.0	

NA: Cannot be computed because the expected frequency is less than 5 in more than 20% of the cells.

Table (3): Relationship between the studied health care providers' demographic characteristics and the mean score of patient's safety standards in the accredited and non-accredited PHC units (n=225).

Healthcare providers characteristics'	Mean Score of Patients' Safety Standards		Test of Sig.
	Accredited PHC units (n=162)	Non-accredited PHC units (n=63)	
	Mean ± SD	Mean ± SD	
Age (years)			
<25	252.86 ± 13.886	238.00 ± 0.000	t=11.688 P=0.000*
≥40	250.96 ± 15.902	227.47 ± 17.386	
Gender			
Male	251.07 ± 15.106	226.47 ± 20.690	F=36.694 P=0.000
Female	250.74 ± 14.733	228.04 ± 20.683	
Marital Status			
Single	253.60 ± 11.578	225.38 ± 20.197	t=23.540 p=0.000
Married	250.78 ± 14.891	227.60 ± 20.799	
Divorced	241.25 ± 25.462	0.000 ± 0.000	
Years of graduation since graduation			
< 5	252.79 ± 11.526	221.31 ± 20.845	t=10.660 p=0.000
> 40	250.32 ± 17.233	231.38 ± 19.654	
Years of experience in the working unit			
< 5	249.45 ± 15.817	224.74 ± 22.000	t=11.807 p=0.000
> 40	255.60 ± 12.460	252.00 ± 8.660	

SD: Standard deviation

F=ANOVA Test t= student T test * Statistically significant at p ≤ 0.05

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