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RESEARCH ARTICLE

Staff Nurses and physicians Attitudes toward the Use of Electronic Patient Record.

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Abstract

Background: Electronic Patient record **(EPR**) links consumers, payers and providers across the continuum of care and provides relevant information to them. It is essential that information can be accessed fromanywhere in the healthcare delivery system, even in remote locations**. Aim:**The current study aimed to assess and compare staff nurses' and physicians' attitudes toward EPR. **Design:** The study used a descriptive survey using self-report questionnaire. **Setting:** The present study was carried atprivate hospital namely al Salama and it is considered the first and the only hospital in Alexandria governorate at Egypt that implemented the EPR documentation system since 2004. It is equipped with around 100 beds, with a wide range of healthcare services. **Subjects:**One hundred and twenty five nurses and 90 physicians who were working in the previous mentioned setting. **Tool:** The data gathering tool staff nurses and physicians' attitudes toward EPR questionnaire. It was developed by the researcher based on Noble James nurses' attitudes toward computerization questionnaire (2002) and the current related literature to determine staff nurses and physicians' attitudes toward the use of EPR. It consists of five main dimensions and 56 sub- dimensions. **Results:** Around two- third 65.6% of staff nurses had positive attitudes toward the use of EPR. On the other hand, more than three quarters of physicians 75.6% had positive attitudes toward the use of EPR. In addition with no significant difference was found between staff nurses and physicians. The total score percent of the physicians' attitudes (75.6) was higher than the total mean score of the staff nurses' attitudes (65.6). **Conclusion:** Knowledge, training, and attitude need continual reinforcement to improve implementation for EPR. These results provide valuable information that could be used to encourage the implementation of EPR in Egypt. **Recommendations:** This study recommended for assuring electronic based documentation as criteria for magnet hospitals on the road of accreditation of healthcare organization. Develop clear policies and guidelines to address issues related to computer based documentation. It should be written and communicated to all healthcare organizations.

INTRODUCTION

Electronic Patient Record "EPR" is a digital computerized version of patients' paper charts. It is a comprehensive clinical information system that allows providers to electronically create, store, organize, edit, and retrieve patient medical records. It includes an electronic patient history (e.g. patient demographics, allergies), clinical documentation (e.g. flow sheets, clinical notes), coding and billing information, diagnostic results from laboratory, radiology or pharmacy, a description of the measures taken (e.g. activity recording, schedule), and a computerized physician order entry (CPOE) [(1)] . It is a prerequisite for the efficient delivery of high quality care and an instrument to decrease medical errors in the health care delivery system [(2,3)].

EPR links consumers, payers and providers across the continuum of care and provides relevant information to them. It is essential that information can be accessed from anywhere in the healthcare delivery system, even in remote locations. It enables system wide patient registration and scheduling coordination as well as management of clinical data. The ability to integrate clinical and financial information is important for monitoring cost-effectiveness and facilitating service planning [4,5]. It has the potential to become the core electronic information and communication system in the healthcare delivery system [6-8].

Staff nurses and physicians represent the largest technology user group in the healthcare delivery system. They use EPR to assess patient care, track problems, manage information, document care, evaluate outcome of care, and monitor the outcome of health services. Their proficiency in the use of all aspects of technology includes both organizational and behavioral issues. Organizational issues include design issues, educational, hardware, and software concerns. Behavioral issues may be attributed to perception, satisfaction, and attitude toward information technology, specifically computerized documentation systems [9].

Attitude is defined as the manner, disposition, feeling, or position in regards to something [10]. Many healthcare organizations are experiencing decline in the enrollment of information system and using EPR. This may be due to disposition and attitudes of many healthcare providers especially staff nurses and physicians that EPR is too hard, uninteresting, and unethical [9]. Staff nurses and physicians with computer knowledge and skills combined with a positive attitude benefit the health care environment [11].These benefits are in relation to reduction of paperwork, improving communication among all healthcare team members, time saving, increase the efficiency of healthcare organizations, improve patient safety and healthcare quality[11].

Staff nurses and physicians' attitudes toward the use of EPR can be measured by five factors: benefits to the organization, benefits to the patients, and benefits to the staff, legal liability, and staff willingness to use computers[12-15].Understanding and determination of physicians and staff nurses` attitudes that attribute to successful implementation of EPR continues to be a crucial area of research to improve the health and well-being of all patients [9].

In UK, a study investigated the attitudes of healthcare staff toward information technology (IT). It revealed that attitudes of healthcare staff are a significant factor in the acceptance and efficiency of use of IT in practice[16].Another study in USA, examined nurses' attitudes toward the use of EPR and its perceived effects on patient care. The study found that nurses with 80% expertise in computer use, had a more favorable attitude toward EPR than those with less expertise [9].

In Kuwait, a study was done to investigate factors influencing nurses' attitudes towards the use of computerized health information systems. It concluded that gender, nationality, education levels, and duration of computer use were statistically significant predictors of attitudes toward computerized health information systems [17]. Another study investigated the overall users reaction and its correlates concerning the newly implemented EPR at primary healthcare centers .It showed that a majority of the respondents found the system flexible, easy and satisfying and that the users' satisfaction with EPR depends on the ease of data input and reduces the frequency of computer errors[18].

In Egypt, a study was done to explore nurses' attitudes toward the use of computers in clinical nursing practice in selected Cairo hospitals. It presented that staff nurses' attitudes were more favorable in relation to reduction of paper work, easier nurses jobs, efficiency, and time saving [19]. Also, another study was done in Alexandria hospitals to investigate computer applications and the users' satisfaction with their use. It showed that the most computer applications in selected hospitals were administrative, and the majority of users were satisfied with the computer applications [20].

This study will determine physicians and staff nurses' attitudes toward the use of EPR. Determination of their attitudes contributes to the successful implementation of EPR. This will increase the efficiency of healthcare organization, improves patient safety, healthcare quality, and decreases the barriers and resistance to the acceptance of EPR.

Methods

Design: Descriptive design was followed in this study.

Setting: This study was conducted in 11 units at Al Salama New Hospital units namely: intensive care unit (ICU), cardiac care unit (CCU), chest pain unit (CPU), surgical intensive care unit (SICU), emergency room (ER), neonatal intensive care unit (NICU), the fourth, fifth, six, seven and eight floor.(total = 11 units). It is a private hospital and it

is considered the first hospital in Alexandria that implemented the EPR documentation system since 2004. It is equipped with around 100 beds, with a wide range of healthcare services such as: outpatient clinics, emergency department, inpatient units for different specialties, operating rooms, and the previously mentioned intensive care units. It also includes a health education center , information technology department (IT),marketing department, quality improvement department and paramedical departments as radiology, laboratory, pharmacy, dietary, laundry, and maintenance departments,…..etc.

Participants: All staff nurses (n=125) and physicians specialists (n=90) who are working in the previously mentioned units and willing to participate in such study were included. All of them are responsible for dealing with patients directly.

Tool:Staff nurses and physicians' attitudes toward EPR questionnaire

It was developed by the researcher based on Noble James nurses' attitudes toward computerization questionnaire (2002) and the current related literature [12-15] to determine staff nurses and physicians' attitudes toward the use of EPR. It consists of five main dimensions and 56 sub- dimensions namely: benefits to the organization (11 sub-dimensions), benefits to the patients (9 sub- dimensions), and benefits to staff (15 sub- dimensions), legal liability (4 sub- dimensions), and staff willingness to use computers (17 sub- dimensions). Responses were measured in a four-point –likert scale ranging from strongly agree (4) to strongly disagree (1). The total score percent is 224 was classified into three categories: positive attitudes (168-224), neutral attitudes (112-167), and negative attitudes (56-111). All negative statements had a reversed score.

Methods

The Ethics Committee of Faculty of Nursing, Alexandria University has reviewed and approved the attitude of nurses and physicians toward EBP protocol. They have determined that this survey does not fall under the committee's jurisdiction. The used questionnaire was tested for content validity by nine experts in the same field of the study. The needed modifications were carried out. The reliability of the internal consistency done using Cronbach's alpha for the staff nurses and physicians' attitudes toward EPR questionnaire and the value were 0.86 respectively, while the statistical significance level was set at $p < 0.05$.

Before embarking to data collection, an informed consent was obtained from each subject to participate in the study. All participants were assured that their participation is voluntary. Also their privacy and confidentiality were maintained. A pilot study was carried out on 12 nurses and 9 physicians who were working in other hospital units rather than the studied units and the necessary modifications were made. The questionnaire was hand delivered to each study subject in the morning, afternoon and night shifts and it was completed through self-report method. About 20 minutes were consumed to complete the questionnaire. Data collection took about two month started from 10th April to 10th June, 2014.

After data were collected it was revised, coded and fed to statistical software SPSS IBM version 20. All statistical analysis was done using two tailed tests and alpha error of 0.05.

The following statistical tests were used: **descriptive statistics** in the form of frequencies and percent were used to describe the categorical data variables and mean with standard deviation for scale data. Scores were transferred to percent to obtain mean scores percent and overall mean scores percent for the main dimensions in relation to the staff nurses and physicians' attitudes toward the use of EPR. To test for differences between staff nurses and physician regarding their attitude score, ANOVA test was used while Chi-Square test x^2 was used to investigate the significant difference of the associations in the cross tabulations of staff nurses and physicians' attitudes toward the use of EPR.

Results

Table 1 shows that the majority of staff nurses 96.0% were in the age group less than 30 years while the highest percentage of physicians 76.7 % are in age group ranging from 30-39 years old. This table also illustrates that the highest percentage 83.2% of staff nurses had Bachelor of Science degree in Nursing followed by secondary technical nursing school diploma 16.0%. On the other hand the highest percentage 88.9% of physicians had Bachelor of Science degree in medicine followed by Master of Science degree in medicine 11.1%.

Regarding the years of experience in the hospital, the highest percentage 93.6% of staff nurses had less than five years of experience in the hospital, while the lowest percentage 0.8% had ten years of experience and more. Moreover, the highest percentage 90.0% of physicians had less than five years of experience in the hospital.

In relation to staff nurses' attendance of training programs about the use of EPR, the highest percentage of them 82.4% stated that they attended training programs about the use of EPR. Regarding the names of training programs the highest percentage 76.7% of staff nurses received installation of vital signs followed by request of lab investigations

46.6%. On the other handsending or receiving E-mail was the least mentioned one among staff nurses 13.6% followed by installation request of consumables 19.4%.While the highest percentage of physicians 72.2% stated that they attended training programs about the use of EPR. Regarding the names of training programs the highest percentage 60.0% of physicians received installation of vital signs, and documentation of treatment procedures and notes followed by request of lab investigations 55.4%. On the other hand installation request of medications was the least mentioned one among physicians 21.5% followed by request of radiological examinations 38.5%.

Concerning staff nurses' need to attend courses or training programs about the use of EPR, slightly more than one-half of them 59.2% mentioned that there was no need. On the other hand only about one- third of physicians 32.2% mentioned that there was a need.

Table 1: Distribution of staff nurses and physicians according to their demographic and professional characteristics at Al Salama New Hospital, Alexandria.

Items	Staff Nurses (n=125)		Physicians (n=90)	
	Frequency	Percentage%	Frequency	Percentage %
Age (years)				
<30	120	96.0	21	23.3
30 – 39	4	3.2	69	76.7
40 – 49	1	0.8	0	0.0
Mean ± SD	25.79 ± 2.60		31.49 ± 2.42	
Education				
A- Education for staff nurses				
Bachelor science degree in Nursing (BSCNg)	104	83.2	-	-
Technical Nursing institute diploma	20	16.0	-	-
Secondary technical nursing school diploma	1	0.8	-	-
B- Education for physicians				
Bachelor science degree in Medicine	-	-	80	88.9
Master of science degree in Medicine	-	-	10	11.1
Years of experience in hospital (years)				
<5	117	93.6	81	90.0
5 – 10	7	5.6	9	10.0
>10	1	0.8	0	0.0
Mean ± SD	2.29 ± 1.42		2.27 ± 1.56	
Previous attendance of training programs or courses about the use of EPR.				
Yes	103	82.4	65	72.2
No	22	17.6	25	27.8
If yes, the topics (n=103)				
Installation of personal data	25	24.3	34	52.3
Installation of vital signs	79	76.7	39	60.0
Request of lab investigations	48	46.6	36	55.4
Request of radiological examination	25	24.3	25	38.5
Installation request of medications	26	25.2	14	21.5
Installation request of consumables	20	19.4	0	0.0
Documentation of treatment procedures and notes	37	35.9	39	60.0
Sending or receiving E-mail	14	13.6	30	46.2

Need to attend a course or training program on the use of EPR?				
Yes	51	40.8	29	32.2
No	74	59.2	61	67.8

Table 2 shows that around two- third 65.6% of staff nurses had positive attitudes toward the use of EPR. On the other hand more than three quarters of physicians 75.6% had positive attitudes toward the use of EPR.

Table 2: Frequency and percentage of staff nurses and physicians' overall score of their attitudes toward the use of EPR at Al Salama New Hospital, Alexandria.

Overall score	**Staff nurses (n=125)**		**Physicians (n=90)**		χ^2	**P**
	No.	**%**	**No.**	**%**		
+ve (168 - 224)	82	65.6	68	75.6		
Neutral (112- 167)	43	34.4	22	24.4	2.459	0.134

χ^2: Chi square test

Table 3 shows that there was no statistical significant difference observed between total mean scores of the staff nurses and physicians' attitudes toward the use of EPR.(t=0.909 p› 0.05).The total mean score of the physicians' attitudes (77.61 ± 12.85) was higher than the total mean score of the staff nurses' attitudes (75.92 ± 13.81).

Table 3, also reveals that there was statistical significant difference between staff nurses and physicians' attitudes toward the benefits to the hospital, benefits to the staff, and the desire of the staff to use the computers dimensions of the use of EPR (t=2.152,2.123,2.421 respectively p‹ 0.05). Furthermore, there was no statistical significant difference between staff nurses and physicians' attitudes toward each of the benefits to the patients, and legal liability dimensions of the use of EPR (t= 0.386, 1.704 respectively).

Moreover, the mean score of the physicians was higher than the mean score of the staff nurses' attitudes in relation to benefits to the hospital dimension (71.45 ± 13.13), and (67.71 ± 12.15) respectively. Table 3 also indicates that the highest mean score was related to the legal liability dimension according to both staff nurses and physicians' attitudes (80.0 ± 18.60, and 84.17 ± 16.34 respectively), while the lowest mean score was related to the benefits to the hospital dimension according to both staff nurses and physicians' attitudes (67.71 ± 12.15), and (71.45 ± 13.13 p‹ 0.05) respectively. Moreover, table 3 shows that there was statistical significant difference between mean scores of the five dimensions among the staff nurses and physicians' groups □ □ □ □ =145.067, 73.017 respectively p‹ 0.01).

Table 3: Mean scores of the different dimensions of staff nurses and physicians' attitudes toward the use of EPR at Al Salama New Hospital, Alexandria.

Dimensions	**Staff Nurses (n = 125)**	**Physicians (n=90)**	**T**	**P**
	Mean ± SD.	**Mean ± SD.**		
1- Benefits to the hospital	67.71 ± 12.15	71.45 ± 13.13	2.152*	0.033
2 - Benefits to the patients	80.89 ± 15.86	81.77 ± 16.96	0.386	0.700
3 - Benefits to the staff	79.31 ± 16.07	74.91 ± 14.13	2.123*	0.035

4- Legal liability	80.0 ± 18.60	84.17 ± 16.34	1.704	0.090
5 – The desire of staff to use computers	74.65 ± 16.35	80.22 ± 17.01	2.421*	0.016
Total	75.92 ± 13.81	77.61 ± 12.85	**0.909**	**0.364**
Friedman x^2 Test	**145.067****	**73.017****		
P	**0.000**	**0.000**		

*: Significant value at the $p \leq 0.05$ level
**: Significant value at the $p \leq 0.01$ level

Table 4 illustrates that the overall mean score percent of staff nurses' attitudes toward the use of EPR was higher among staff nurses from 30-39 years old than those who were less than 30 years old (72.47 ± 15.65, and 76.16 ± 13.79 respectively) with no statistically significant difference detected .

Regarding the level of education, this table reveals that the overall mean score percent of staff nurses' attitudes toward the use of EPR was higher among staff nurses who had Bachelor of Science degree in nursing than secondary technical staff nurses (76.65 ± 14.04, and 72.89 ± 12.30 respectively) with no statistically significant difference detected.

The overall mean score percent of staff nurses' attitudes toward the use of EPR was higher among staff nurses who had less than five years of experience in the hospital than those who had five to ten years of experience.(76.57 ± 13.99 and 66.24 ± 5.56 respectively) with no statistically significant difference detected.

Moreover, table 6 shows that the overall mean score percent of staff nurses' attitudes toward the use of EPR was higher among staff nurses who attended training programs or courses about the use of EPR than who did notattend (77.02 ± 13.58, and 70.78 ± 14.03 respectively) with no statistically significant difference detected.

The overall mean score percent of staff nurses' attitudes toward the use of EPR was higher among staff nurses who stated that they were not in need to attend training programs or courses about the use of EPR than who need (77.04 ± 13.88, and 74.30 ± 13.69 respectively) with no statistically significant difference detected.

Table 4: Mean scores of the staff nurses' attitudes toward the use of EPR at Al Salama New Hospital, Alexandria according to their demographic and professional characteristics.

Staff nurses items	**Overall Mean ± SD**	**Test of sig.**	**P**
Age (years)			
<30	76.16 ± 13.79		
30 – 39	72.47 ± 15.65	F= 0.746	0.477
40 – 49	60.71		
Education			
Bachelor science degree in Nursing (BSCNg)	76.65 ± 14.04		
Technical Nursing institute diploma	72.89 ± 12.30	F = 1.237	0.294
Secondary technical nursing school diploma	60.71		
Experience in the hospital (years)			
<5	76.57 ± 13.99	F = 2.081	0.129
5 – 10	66.24 ± 5.56		

>10	67.26		
Previous attendance of training program on the use of EPR			
Yes	77.02 ± 13.58	t = 1.944	0.054
No	70.78 ± 14.03		
Need to attend courses or training programs about the use of EPR			
Yes	77.04 ± 13.88	t = 1.089	0.278
No	74.30 ± 13.69		

F: F test (ANOVA)
t: Student t-test

Table 5 shows that the overall mean score percent of physicians' attitudes toward the use of EPR was higher among physicians from 30-39 years old than those who were less than 30 years old (78.24 ± 12.68, and 75.51 ± 13.50 respectively) with no statistically significant difference detected.

Regarding the level of education, table 7 reveals that the overall mean score percent of physicians' attitudes toward the use of EPR was higher among physicians who had Bachelor of Science degree in medicine than master degree (78.98 ± 12.26, and 66.61 ± 12.75 respectively).

Moreover, the table 7 shows that the overall mean score percent of physicians' attitudes toward the use of EPR was higher among physicians who had less than five years of experience in the hospital than those who had five to ten years of experience.(77.62 ± 12.65 and 78.86 ± 12.74 respectively) with no statistically significant difference detected.

Also, the overall mean score percent of physicians' attitudes toward the use of EPR was higher among physicians who did not attended training programs or courses about the use of EPR than attended (79.43 ± 13.35, and 76.90 ± 12.69 respectively) with no statistically significant difference detected.

The overall mean score percent of physicians' attitudes toward the use of EPR was higher among physicians who stated that they were not in need to attend training programs or courses about the use of EPR than who need (77.93 ± 13.11, and 76.93 ± 12.50respectively) with no statistically significant difference detected.

Table 5: Mean scores of the physicians' attitudes toward the use of EPR at Al Salama New Hospital, Alexandria according to their demographic and professional characteristics.

Physicians' items	Overall Mean ± SD	Test of sig.	P
Age (years)			
<30	75.51 ± 13.50	t = 0.852	0.396
30 – 39	78.24 ± 12.68		
Education			
Bachelor of science degree in Medicine	78.98 ± 12.26	t = 2.996*	0.004*
Master of science degree in Medicine	66.61 ± 12.75		
Duration in the hospital (years)			
<5	77.62 ± 12.65	t = 0.039	0.969
5 – 10	77.45 ± 15.40		

Previous attendance of training program about the use of EPR Yes No	 79.43 ± 13.35 76.90 ± 12.69	t = 0.833	0.407
Need to attend further courses or training programs on the use of EPR Yes No	 77.93 ± 13.11 76.93 ± 12.50	t = 0.343	0.733

F: F test (ANOVA)
t: Student t-test

Discussion

With the rapid increase in information technology that has occurred over the past two decades, the healthcare delivery system has been faced with changes in the way healthcare information is managed. EPR system has become an integral component of daily operations in many healthcare organizations [21]. Its successful implementation within healthcare settings depends on the resolution of problems related to the interface between information technology and the human being [22]. One of these interface problems is the attitudes of staff nurses and physicians who are expected to use the new information technology in their work situation to improve patient care [22, 23].

The present study revealed that the overall staff nurses and physicians' attitudes toward the use of EPR was positive with no statistically significant difference. This high score may be due to their positive perceptions about the benefits of EPR system in healthcare as it is cost-efficient, improves communication between healthcare providers, provides better accessibility to complete healthcare information, reduces healthcare errors and support clinical practices, health services and research. All these benefits have the potential to save time and money for the healthcare providers, while improving the quality of patient care [12-15]. This result is consistent with Brodt and Stronge (1986), Scarpa et al. (2001), Large (2004), King (2009), and Wood (2011) who mentioned that staff nurses and physicians' attitudes toward EPR were generally positive [24-28]. On the other hand, it is inconsistent with Pabst et al. (2006) who mentioned that the expected effects of EPR on the work of staff nurses and physicians are negative as it requires more time and workload by staff nurses and physicians than paper-based documentation [29].

The present study revealed that physicians' attitudes were higher than staff nurses' attitudes toward the benefits to the hospital dimension of the use of EPR. This may be attributed to staff nurses' perceptions that lack of computer skills inhibits their desire to use computers. They may feel rather than physicians that their inability to type quickly and lack of comfort with computers could act as a barrier to EPR adoption. In-turn physicians' desire to use EPR system is higher than staff nurses' desire.

Also, this study revealed that staff nurses' attitudes were higher than physicians' attitudes toward the benefits to the staff dimension of the use of EPR. This significant difference may be due to perceived specific benefits of EPR by the majority of staff nurses as: acquiring computer skills, reducing paperwork, documenting nursing practices easier with minimal efforts, improving communication between all healthcare providers, and increasing professional nursing knowledge base [12].

This result is supported by Pai and Huang (2011) who stated that staff nurses preferred the EPR over paper charts as it saves staff nurses' time and paperwork in procedures such as ordering laboratory tests, food, and pharmacy items [30]. Also, it increases staff nurses' time for observing patients [29, 31-32]. Allan et al. (2002) found that the time required for computer documentation was significantly less than for handwritten documentation [33]. Furthermore, it decreases error rates and time in communication between all hospital departments and improves staff nurses abilities to learn new skills [34-38]. This result is supported by the fact that EPR is viewed by staff nurses and physicians as a system that improves documentation of accurate healthcare information, empowers patients, and improves patient safety [39-41].

Moreover, this study illustrated that the overall mean score percent of staff nurses and physicians' attitudes toward the use of EPR was higher among staff nurses and physicians in the age group from 30-39 years old than those who were less than 30 years old. This may be related to the fact that younger individuals are not fully aware of their implicit attitudes and an increase in age helps them to recognize and become fully aware of the direction of their implicit attitudes. This finding is supported by Gans et al. (2005), Swartz (2007), and Sultana (2011) [42-44]. This result is inconsistent with Brodt and Stronge (1986) who stated that there was no relationship between staff nurses and physicians' age and their attitude toward the use of EPR [24].

Furthermore, this study indicated that the overall mean score percent of staff nurses' attitudes toward the use of EPR was higher among staff nurses who had Bachelor of Science degree in Nursing than staff nurses with technical nursing institute diploma. This could be attributed to the variability of curriculum of the two degrees. Thus, cognitive thinking is broader in staff nurses who had Bachelor of Science degree in Nursing than staff nurses with technical nursing institute diploma. Also, their curriculum includes an International Computer Driving License (ICDL) as a prerequisite for their graduation. Which in-turn affect positively on their attitudes toward the use of EPR [45].

Also, the overall mean score percent of physicians' attitudes toward the use of EPR was higher among physicians who had Bachelor of Science degree in Medicine than those who had master degree. This could be attributed to the wide gap in the two overall mean score percent as the total sample size of physicians who had Bachelor of Science degree in Medicine was largely more than total sample size of physicians who had master degree. The result of this study is inconsistent with Simon (2007) who demonstrated that the higher level of education, the more favorable the attitudes toward the EPR [46].

Moreover, this study illustrated that the overall mean score percent of staff nurses and physicians' attitudes toward the use of EPR was higher among those who had less than five years of experience in the hospital than those who had five to ten years. This may be related to hospital obligation for newly hired staff nurses and physicians to attend educational courses and training programs about the use of EPR in their orientation period. Furthermore, they are the generation of technology and net browsing which facilitate their use and increase their interest in the use of EPR system [47-50]. Another possible explanation is that staff nurses and physicians who had five to ten years of experience in the hospital attend the period of time while paper-based patient records were practiced more than EPR.

Also, this study showed that the overall mean score percent of staff nurses' attitudes toward the use of EPR was higher among staff nurses who attended training programs or courses about the use of EPR than who did not attend. This could be due to their previous attendance of EPR training courses at Al-Salama New hospital will enhance learning about EPR and an understanding of the importance of the role it will play in the future of healthcare. Al-Salama New hospital conducted training sessions which estimated about 88 hours in two to four weeks and continued training on new features and upgrades software after the EPR system installation. This finding is supported by Palmer (1999),Desroches (2002), Klajakonic et al. (2004), Sinclair and Gardner (2006), and Saranto and Leinokilpi (2007) who stated that it is important in developing any newly hired employees to have information and training related to the use of EPR [51-55].

On the other hand, it was unexpected in this study that the overall mean score percent of physicians' attitudes toward the use of EPR was higher among physicians who did not attend training programs or courses about the use of EPR than those who attended. This may be due physicians' incompliance to attend the hospital training programs in their orientation period. They depend on their colleagues and personal experience with computer in their use of EPR.

Also, the result of this study showed that the overall mean score percent of staff nurses and physicians' attitudes toward the use of EPR was higher among those who stated that they were not in need to attend training programs or courses about the use of EPR than who need. This may be attributed to their perceptions that they are competent in the use of EPR. Also, they may feel that EPR system is not complex to use.

According to Hammond et al.(1997) and Lamabee et al.(2001), understanding staff nurses and physicians attitudes toward EPR system has proven to be one of the most important and challenging issues in the successful EPR implementation [56,57] . Also, with the enormous advancement in electronic communication and EPR technologies, the healthcare delivery system became in a desperate need for applications of these EPR technologies in order to compete and survive [58-61].

The results of the present study concluded that the overall staff nurses and physicians' attitudes toward the use of EPR were positive. Moreover, there was no statistical significant difference observed between total mean scores of the staff nurses and physicians' attitudes toward the use of EPR.

Furthermore, the results of the present study revealed that age, education, years of experience in the hospital did not significantly affect staff nurses and physicians' attitudes toward the use of EPR.

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