

Perception of nurses on ease of use, usefulness and system quality of electronic clinical documentation (ECD) at private hospitals in Klang Valley, Malaysia

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ABSTRACT

Introduction: The health information system with efficient processes and development in healthcare technology including an electronic clinical documentation (ECD) reporting draws the interest of a large number of people. Widespread expansion of the use of ECD is known to be advantageous to the health information system, however a workload is often questionable for healthcare professionals and productivity practices. The aim of this study is to analyse the perception of nurses in regards to the relationship between perceived ease of use, perceived usefulness and perceived system quality of ECD system.

Methods: The cross-sectional survey comprised of a population of nurses practising in clinical settings at private hospitals in Klang Valley, Malaysia. A total of 324 questionnaires was collected by using stratified random sampling with a 99% response rate. Smart-PLS was used to analyse the relationship between the latent variables.

Results: The perceived ease of use, perceived usefulness and perceived system quality have a significantly positive influence, resulting in a positive impact on the perception of nurses. The results of this research showed that the model's R^2 value was scored at 0.743, which indicated that 74.3% of the variance in perception on ECD was collectively explained by the three exogenous latent variables.

Conclusion: Positive perception on ECD system could be used as prediction on the acceptance by the user/nurses. This study is useful for top management and policymakers to strategise on ECD's implementation.

Keywords: Medical record, computerised, Electronic clinical documentation, Technology Acceptance Model, Nurses

Introduction

Recently, the healthcare sector is one of the leading industries that serves high impact quality service and treatment. With regards to this, the electronic clinical documentation (ECD) in the health information system incorporated with supporting characteristics that are manageable and faster, leading to the efficient hospital services (Ismail et al., 2015), will enable enhanced legibility, systematic storage, and immediate retrieval of notes. The system allows synchronised use of medical record by several users, improves security and privacy, and facilitates research (Hedian et al., 2018). This system is beneficial in protecting the privacy and personal rights of the patient, as well as safety, quality of care and management of health information. The consistency and capacity of this system to provide information as well as resources depend on the regular process between providers of healthcare, including physicians, nurses, allied health, and other medical stakeholders (Aldosari et al., 2018).

The new technology triggered many hopes, fears, and grumbles among healthcare professionals on the ECD system. The transformed system from the paper-based medical record to the electronic system is likely to disrupt the events or workflow in a hospital setting. There is sometimes a questionable burden of work for healthcare professionals and productivity practices (Koneko et al., 2018). Previous study by Mehrotra et al. (2016) reported various challenges and effect after implementation of this system, including ineffective workarounds, disruptions

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in continuity of care, and other electronic errors. The concern of the healthcare employee on the ECD system is whether it is an instrument that can communicate more proficiently about clinical care, or whether it has its ability to fast check medication orders and clinical resolution support which holds the key to increasingly accurate diagnoses (Hedian et al., 2018).

Therefore, it is noteworthy to determine the efficacy of the ECD system in considering the perceived ease of use, perceived usefulness and perceived system quality which substantially contribute to healthcare provider success. In the context of this study, it analysed the perception on ECD system among the nurses who play an important role in the Malaysian healthcare system.

The computerised documentation is an electronic information system used by healthcare practitioners, including nurses, to regularly record clinical information related to an individual's health. In the practice setting, this digitalised collection of information is referred to as the patient's electronic health or medical record. This includes the diagnoses, assessment data, medication orders, clinical intervention, patient's medical histories, consultations, care plan, laboratory data and patient outcomes. This record is very useful in promoting high delivery of quality care by facilitating the structured communication between nurses and other members of the healthcare team and could give largely positive impact on patient safety (Mehrotra et al., 2016).

Over the last few decades, many models and theories have been developed and tested in order to identify variables affecting the acceptance and use of technology provided to end-users. Among them, the Technology Acceptance Model (TAM) stimulated one of the most active streams of research to predict intention to use the

technology and explain actual use of that technology. The goal of this study was to explore the perception of nursing staff adopting the electronic technology system in the healthcare sector in Malaysia. In order to examine the factors influencing the attitudes of nursing staff towards the application and implementation of the ECD, two variables from the Technology Adoption Model (TAM) were added. According to Davis' (1989) Technology Acceptance Model (TAM), it contributes a theoretical model-based for explaining or anticipates the factors that cause an individual to accept or reject information technology (IT). TAM is proven to be a fit model for the healthcare context to predict the attitudes towards using the computerized system by investigating the users' perceptions of IT. A study by Garavand et al. (2016) concluded that TAM showed validity, reliability, power and simplicity of IT and additional studies that were conducted showed the high ability of the TAM to demonstrate the technology adoption among staff.

In this study, two distinct variables were validated; perceived usefulness and perceived ease of use were exploited. Perceived ease of use refers to the extent or degree to which the consumer assumes or believes that the information system is simple to use and easy to use, whereas perceived usefulness refers to people's level of belief that using the system would help them achieve better job results and whether or not they will use such technology. One external variable is added to study the perception towards the quality of system. Perceived system quality is defined as a standard of system that had been measured which reflects to its own system's values and integrity including on its completeness and accuracy of data components. Figure I shows a model consisting of two TAM variables, perceived ease of use and perceived usefulness as prediction variables in addition to the other

factor, perceived system quality, which has shown its importance in influencing the perception of information system. Thus, this study developed the hypothesis:

- *H1 = Perceived ease of use has a significant and positive effect on the perception of nurses on electronic clinical documentation.*
- *H2 = Perceived usefulness has a significant and positive effect on the perception of nurses on electronic clinical documentation.*
- *H3 = Perceived system quality has a significant and positive effect on the perception of nurses on electronic clinical documentation.*

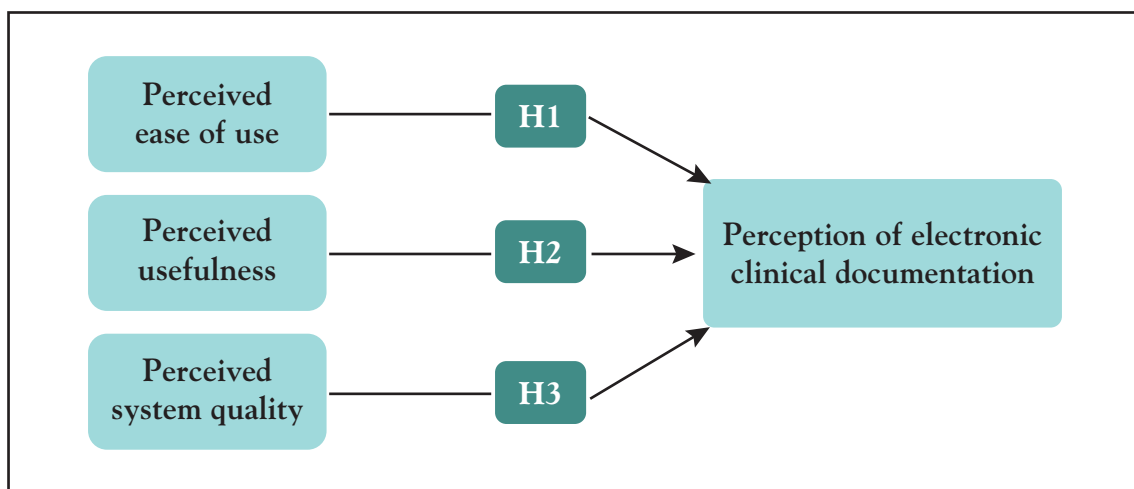


Figure I: Conceptual framework of Perception of Electronic Clinical Documentation

Methodology

Study setting

This study was conducted in three private hospitals within Klang Valley. The hospitals involved in the study were considered as specialist hospitals and tertiary private hospitals. These hospitals had been identified and certified nationally by the Malaysian Society for Quality in Health Care and internationally by the Joint Commission International. The following criteria were used to determine the hospitals:

- *The hospitals were using the same Clinical Information System*

- *The hospitals were in the transitional phase from paper-based documentation to electronically-based documentation*

Participants

The target population of participants included all nurses with more than two (2) years working experience at target hospitals and were experienced in using ECD in their clinical practice during the data collection phase from March 2020 till June 2020. Stratified random sampling was used to select a total sample size for the study. A group of nurses was chosen based on their specialty department, and then participants were

randomly selected in each department. A total of 324 nurses took part in the study by following the guidelines (Krejcie & Morgan Table, 1970). The nurses were required to return the survey after completion within data collection period.

Questionnaire

The items in the instruments were selected from this instrument to suit the respondents' needs according to the research objectives. On a 5-point Likert scale, there were 34 items in the form of a measurement scale that instructed the nurses to mean "1 = strongly disagree" to "5 = strongly agree." The first section consisted of six questions that identified the respondent's demographic information. The second section included 28 questions that focused on the factors that influence nursing students' perception of ECD, such as perceived ease of use, perceived usefulness, perceived system quality, and intention to use the ECD.

Data analysis

The structural equation modelling was used to study the correlation between the factors. Structural equation modelling analysis (SEM) using SmartPLS ver. 2.0M3 is a statistical technique used for analysing structural models which contain latent variables (Hair et al., 2020, p. 109). Two types of models can be analysed using SEM: a measurement model and a structural model. The measurement model evaluates the extent to which the predicted relationships among the variables is reflected in the relationships among the observed variables. The structural model measures the extent of the relationship among latent constructs as well as the relationship among other measured variables. If the data from the hypothesized model and observed models match, the structural equation model can be used to explain

the hypothesized model. The nature of the research hypothesis provides the rationale for the use of structural equation modelling as a data analysis technique. This study focused on the structural model and tested the validity of the hypothesized structural model compared to the observed model.

Results

Nurses' demographic information

Table I shows the descriptive analysis of the demographics of the study participants. Among the respondents, 311 (96%) of the nurses who responded to this survey were female, while 13 (4%) of the respondents to the survey were male. The age of respondents was widely distributed with 161 (49.7%) of the nurses that took the survey for this study between 20 to 29 years, while 128 (39.5%) of nurses between 30 to 39 years. The number of nurses between 40 to 49 years was 26 (8%) and aged between 50 to 59 years was 9 (2.8%) respondents. Analysis of the nurses' educational level revealed that 287 (88.6%) of the respondents to the survey were graduates with Diploma certificate and recognised as Staff Registered Nurse (SRN), 33 (10.2%) of the respondents of this survey were graduates with Bachelor degree, while 4 (1.2%) of the respondents are Master/PhD holders. Work experience in nursing practice ranged from less than five to more than 25 years. The largest proportion of nurses, 124 (38.3%) had practiced within 2 to 5 years, 108 (33.3%) had worked within 6 to 10 years, 49 (15.1%) had worked within 11 to 15 years, 24 (7.4%) had worked within 16 to 20 years, 11 (3.4%) of the nurses who responded to this survey had worked for 21 to 25 years and lastly 8 (2.5) of nurses who responded to this survey had worked more than 25 years.

Table I: Nurses' demographic information

Characteristics	(N = 324)	%
Gender		
Male	13	4.0
Female	311	96.0
Age (years)		
20 – 29	161	49.7
30 – 39	128	39.5
40 – 49	26	8.0
50 – 59	9	2.8
Education level		
Diploma	287	88.6
Bachelor	33	10.2
Master/PhD	4	1.2
Years of experience in working		
2 – 5	124	38.3
6 – 10	108	33.3
11 – 15	49	15.1
16 – 20	24	7.4
21 – 25	11	3.4
More than 25	8	2.5
Duration of computer usage (years)		
2 – 5	141	43.5
6 – 10	119	36.7
11 – 15	29	9.0
16 – 20	16	4.9
20 – 25	9	2.8
More than 25	10	3.1
Formal computer training		
Yes	250	77.2
No	74	22.8

Evaluation of outer measurement model (SEM)

The purpose of the outer measurement model is to evaluate the reliability, internal accuracy, and validity along with unobserved variables of the observed variables. Consistency assessments are based on single reliability measures observed and constructed, while convergent and discriminant validity are used for validity evaluation. Observed variables with an outer loading of 0.7 or greater are believed to be greatly acceptable, while the outer loading with a value less than 0.7 should be discarded (Hair et al., 2020).

The cut-off value approved for the outer loading was 0.7 for this analysis. The outer loadings varied between 0.853 and 0.969 from Table II. For internal consistency assessment of the construct reliability, Cronbach's alpha and Composite Reliability (CR) were used. Nevertheless, CR is thought to be a better assessment of internal accuracy compared to the alpha of the Cronbach, since it maintains the consistent loadings of the variables observed. The Cronbach's alpha and CR (Table II) was greater than 0.80, for all constructs. Therefore, the Cronbach alpha and CR showed that the scales were reasonably accurate and showed that all the latent construct values exceeded the minimum threshold level of 0.70. The Average Variance Extracted (AVE) of each latent construct was determined to verify

the convergent validity of the (Hair et al., 2020). The latent constructs in the model should take the lowest 50 percent of the variance from the variable observed. This implies, therefore, that the AVE should be above 0.5 for all constructs. Table II shows that all AVE values were greater than 0.5, so for this study model, convergent validity was confirmed. The convergent validity and good internal consistency of the measurement model were verified by these findings.

The next attempt was the discriminatory validity of the latent constructs. Discriminant validity determines that the manifest variable in any construct is distinct from other constructs in the path model, where the cross-loading value in the latent variable is greater than in any other construct (Hair et al., 2020). The latent variable correlation and cross-loadings were used to evaluate the discriminant validity. The standard proposed is that the construct does not display the same variance as any other construct that is more than its AVE value. Table III shows that the cross-loading of all the variables observed was more than the inter-correlations of the construct of all the other variables observed in the model. These results therefore validated the cross-loading evaluation criteria and offered an acceptable validation of the discriminatory validity of the measurement model.

Table II: Construct Reliability and Validity

Main construct	Items	Loadings	Cronbach's Alpha	CR ^a	AVE ^b
Perceived ease of use	PEOU-1	0.899	0.949	0.962	0.834
	PEOU-2	0.939			
	PEOU-3	0.942			
	PEOU-4	0.929			
	PEOU-5	0.853			
Perceived usefulness	PU-1	0.873	0.979	0.982	0.833
	PU-2	0.894			
	PU-3	0.914			
	PU-4	0.940			
	PU-5	0.915			
	PU-6	0.934			
	PU-7	0.945			
	PU-8	0.934			
	PU-9	0.909			
	PU-10	0.875			
	PU-11	0.902			
Perceived system quality	PSQ-1	0.884	0.970	0.975	0.827
	PSQ-2	0.914			
	PSQ-3	0.886			
	PSQ-4	0.926			
	PSQ-5	0.886			
	PSQ-6	0.937			
	PSQ-7	0.926			
	PSQ-8	0.918			
Perception on nurses toward electronic clinical documentation	PN-1	0.961	0.975	0.981	0.929
	PN-2	0.963			
	PN-3	0.964			
	PN-4	0.969			

^a Composite reliability (CR), $(\text{square of the summation of the factor loadings}) / ((\text{square of the summation of the factor loadings}) + (\text{square of the summation of the error variances}))$.

^b Average variance extracted (AVE), $(\text{summation of the square of the factor loadings}) / ((\text{summation of the square of the factor loadings}) + (\text{summation of the error variances}))$.

Table III: Cross-Loading of all variables

	PEOU	PU	PSQ	PN
PEOU-1	0.899	0.731	0.668	0.696
PEOU-2	0.939	0.793	0.713	0.728
PEOU-3	0.942	0.792	0.717	0.730
PEOU-4	0.929	0.784	0.735	0.701
PEOU-5	0.853	0.672	0.626	0.576
PU-1	0.710	0.873	0.723	0.723
PU-2	0.753	0.894	0.735	0.748
PU-3	0.764	0.914	0.788	0.774
PU-4	0.778	0.940	0.811	0.843
PU-5	0.786	0.915	0.803	0.778
PU-6	0.766	0.933	0.793	0.766
PU-7	0.777	0.943	0.794	0.811
PU-8	0.783	0.935	0.786	0.794
PU-9	0.722	0.909	0.779	0.770
PU-10	0.733	0.875	0.769	0.720
PU-11	0.738	0.902	0.763	0.780
PSQ-1	0.671	0.740	0.883	0.683
PSQ-2	0.707	0.760	0.814	0.700
PSQ-3	0.664	0.726	0.886	0.656
PSQ-4	0.698	0.808	0.925	0.755
PSQ-5	0.624	0.715	0.886	0.660
PSQ-6	0.716	0.826	0.937	0.765
PSQ-7	0.719	0.810	0.926	0.779
PSQ-8	0.717	0.797	0.918	0.752
PN-1	0.726	0.819	0.775	0.961
PN-2	0.727	0.817	0.761	0.963
PN-3	0.724	0.819	0.775	0.964
PN-4	0.735	0.818	0.747	0.969

^aBold values are loadings for each item that are above the recommended value of 0.5; and an item's loadings on its own variable is higher than all of its cross-loadings with other variables.

Evaluation of inner structural model

The outcomes of the Inner Structural Model observe the predictive significance of the model and the interaction between the constructs. The coefficient of determination (R^2), the coefficient of path (β value) and the T-statistic value, the size of the effect, the predictive relevance of the model (Q^2) and the index of goodness of fit (GOF) are key standards for evaluating the internal structural model.

Measuring the Value of R^2

The coefficient of determination determines the total size and variance of the effect explained in the endogenous structure of the structural model and is thus a measure of the predictive accuracy of the model. The inner path model for the endogenous latent construction was 0.743 in this analysis. This suggests that the three separate constructs provide a substantial explanation of 74.3% of the variation in nurses' perception of electronic clinical documentation, meaning that about 74.3% of the change in the perception of nurses were due to three latent constructs in the model. According to Hair, Hult, et al. (2017), an R^2 value of 0.75 is considered substantial, an R^2 value of 0.5 is regarded as moderate,

and an R^2 value of 0.26 is considered as weak. Hence, the R^2 value in this study was substantial.

Estimation of Path Coefficients (β) and T-statistics

The path coefficients in the PLS and the standardised β coefficients in the regression analysis were similar. The importance of the hypothesis was checked by the β value. The β denotes the predicted variance in the dependent construct for the unit variation in the independent construct(s). The β values of each path in the hypothesised model have been determined, the higher the β value, the more the substantial effect on the endogenous latent construct. β value is always standardized path coefficients. Given standardization, path weights therefore vary from -1 to +1. Weights closest to absolute 1 reflect the strongest paths. Weights closest to 0 reflect the weakest paths. However, the β value had to be verified for its significance level through the T-statistics test. The bootstrapping procedure was used to evaluate the significance of the hypothesis. To test the significance of the path coefficient and T-statistics values, a bootstrapping procedure using 324 subsamples with no sign changes was carried out for this study as presented in Table IV.

Table IV: Path Coefficient and T-statistics

Hypothesized path	Standardized Beta	T-statistics ^a	Decision
Perceived ease of use → Perception of nurses	0.126	1.756*	Supported
Perceived usefulness → Perception of nurses	0.549	6.290***	Supported
Perceived system quality → Perception of nurses	0.230	2.449**	Supported

^at-values for two-tailed test

* 1.65 (sig. level 10%)

** 1.96 (sig. level=5%)

*** t-value 2.58 (sig. level=1%) (Hair et al., 2011)

In H1, the researcher predicted that the perceived ease of use would significantly and positively influence perception of nurses on electronic clinical documentation. As predicted, the findings in Table IV confirmed the perceived ease of use on the perception of nurses toward ECD ($\beta = 0.126$, $T = 1.756$). Hence, H1 was supported. Meanwhile, when observing the direct and positive influence of perceived usefulness on perception of nurses toward electronic clinical documentation (H2), the findings from Table IV endorsed that the perceived usefulness high positively influenced perception on nurses ($\beta = 0.549$, $T = 6.290$), and confirmed the H2. The influence of the perceived system quality on perception on nurses was also positive and significant ($\beta = 0.230$, $T = 2.449$), showing that H3 was supported. The greater the beta coefficient (β), the stronger the effect of an exogenous latent construct on the endogenous latent construct. Table IV showed that the perceived usefulness had the topmost path coefficient of $\beta = 0.549$ when compared to other β values in the model, which showed that it had a greater value of variance and high effect with regard to affecting the perception of nurses toward the ECD. Whereas, the

perceived ease of use had the least effect on perception of nurses with $\beta = 0.149$.

Measuring the Effect Size (f^2)

The f^2 is the degree of impact of each latent exogenous construct on the latent endogenous structure. If an independent construct is removed from the path model, it changes the value of the coefficient of determination (R^2) and determines whether the removed latent exogenous construct has a major effect on the value of the latent endogenous construct. The f^2 values were 0.35 (strong effect), 0.15 (moderate effect), and 0.02 (weak effect) (Cohen, J., 1988). Table V shows the f^2 from the SEM calculations. The effect size for perceived ease of use, perceived usefulness and perceived system quality on perception of nurses on the ECD were 0.475, 0.469 and 0.599, respectively. Hence, according to Cohen's (1988) recommendation, the f^2 of all three exogenous latent constructs on perception of nurses had strong effect on the value of R^2 . Furthermore, all the three independent latent constructs in this study participated relatively to the greater R^2 value (74.3%) in the dependent variable.

Table V: Effect size for perceived ease of use, perceived usefulness and perceived system quality on perception of nurses on the ECD

Exogenous latent variable	Effect size f^2	Total effect
Perceived ease of use	0.475	Strong
Perceived usefulness	0.469	Strong
Perceived system quality	0.599	Strong
Perception of nurses	0.605	Strong

Value effect size

0.02 Small

0.15 Medium

0.35 Large

Predictive Relevance of the Model (Q^2)

Q^2 statistics are used to measure the quality of the PLS path model, which is calculated using blindfolding procedures, and cross-validated redundancy was performed. The Q^2 criterion recommends that the conceptual model can predict the endogenous latent constructs. In the SEM, the Q^2 values measured must be greater than zero for a particular endogenous latent construct (Hair et al., 2020). From the analysis, it showed that the Q^2 values for this study model was equal to 0.743, which was higher than the threshold limit, and supports that the path model's predictive relevance was adequate for endogenous construct.

Goodness-of-Fit Index (GOF)

GOF is used as an index for the complete model fit to check that the model properly describes the empirical

evidence. The GOF values are between 0 and 1, where the values of 0.10 (small), 0.25 (medium) and 0.36 (large) imply the global validation of the path model. A good fit model indicates that the model is parsimonious and plausible (Henseler et al., 2016). The GOF is calculated by using the geometric mean value of the average communality (AVE values) and the average R^2 value(s), and the GOF of the model is calculated by Equation 1.

Equation 1

$$\text{GOF} = \sqrt{\text{Average } R^2 * \text{Average communality}}$$

It was determined from Table VI that the GOF index for this study model was 0.796, which indicates that empirical data is adequate for the model and has important predictive power compared to baseline values.

Table VI: Goodness-of-fit index calculation

Construct	Ave	R^2
Perceived ease of use	0.834	
Perceived usefulness	0.833	
Perceived system quality	0.827	0.743
Perception of nurses	0.929	
Average values	0.856	
GOF	0.796	

Correlation Coefficient of Latent Variables

Table VII displays the significance of the latent variable correlation coefficients. It indicates that there was a strong correlation between the latent exogenous construction and the latent endogenous construction. In line with the complete study of the measurement models

and the structural model, it was determined that both models had been confirmed. Both of the hypotheses were statistically valid and were thus accepted. The results of this study support a richer and accurate picture of the factors affecting the perception of nurses on ECD at private hospitals in Malaysia

Table VII: Latent Variable Correlations

	Perceived ease of use	Perceived usefulness	Perceived system quality	Perception on nurses
Perceived ease of use	1.000			
Perceived usefulness	0.828	1.000		
Perceived system quality	0.759	0.852	1.000	
Perception on nurses	0.754	0.848	0.793	1.00

Discussion

The adoption of ECD system has been widespread over recent years with the promise of more efficiency of information sharing among the healthcare staff. In addition, in the transition from paper-based to electronic health record, it was hoped the new phase would lead to improved patient safety and information flow and access to knowledge in a short duration of time (Baumann et al., 2018). This study used TAM factors; perceived ease of use and perceived usefulness as predictive factors that may lead to the ECD user positive acceptance. An additional variable used in this study was perceived system quality to measure the perception of the system from the perspective of new users. The findings of the study supported the theory that the majority of nurses were in agreement that the ECD system is integrated with their daily work. This is also supported by the findings of other studies in the similar area, where the positive perception of these two factors in TAM model showed that a positive relationship existed between them (Tubaishat, 2017).

Additionally, the nurses stated that the information provided by the ECD system makes their work easier as they have access to the information where and when

they need it, they can find all the constantly updated information they need. They consider that the data they register are essential for the care of patients. This result showed that the system tends to be more useful to their work.

On the other hand, the outcomes of this study showed that 77.2% of the nurses had attended the formal computer training for the ECD system. This clearly suggests that with the help of adequate computerized electronic healthcare system, the implementation of ECD system could be acceptable and effective among the nurses in providing quality healthcare in the hospitals. According to Aldosari et al. (2018) and Baumann et al. (2018), the introduction of electronic record system into a clinical setting must be carefully considered with effective training to enable staff to be comfortable with the new system. The perception of increase in workload may cause end users to be unlikely to accept any electronic clinical documentation system. Hence, with a proper computerized training given to the users, the hope is in the long run, with full transition from paper to electronic records and time for the nurses to adapt, the workflow will improve and documentation time will decrease.

According to previous studies, the U.S. federal government has enacted legislation with the aim of promoting the “meaningful use” of electronic health record (EHR) systems by health providers and medical practitioners, and approved the idea of federal government providing required funds necessary for compliance with the “meaningful criteria and advanced patient involvement in the system”. Considering nurses’ needs of providing high quality healthcare information, user-friendly systems and adequate training would improve nurses’ acceptance towards computerization. They can be considered as key factors in affecting the planning and implementation of EMR (J Johnson III, 2016).

In addition, the findings also further supported the TAM factors developed by Davis (1989), as they suggested a positive correlation between perceived ease of use and perceived usefulness. It claimed that the perceived usefulness and ease of use had a positive impact on nurses’ perception of the use of the ECD system. It cannot be argued that ECDs have had a major positive impact on patient care. At present, the clinical information system has become a critical foundation for transforming health care and is a key benchmark for enriching the quality of health care, optimising patient management and expanding excellent outcomes in the delivery of health care. With the introduction of

innovative methods and strategies in the field of clinical information systems, the best electronic medical record systems are being created to address the current needs of patients and healthcare organisations. Some of the latest and advanced features of the ECD system include securing patient information by role-based access, which enables only approved personnel to access the system in order to display patient records and use data for document access control auditing.

Conclusion

This research established and determined that nurses had a positive attitude towards perceived ease of use and perceived usefulness in terms of perception of the ECD system. The use of ECD in this hospital environment helps to ensure the effectiveness of clinical treatment and the protection of patients. The system is definitely an improvement over paper-based records when it comes to preserving reliable and accurate patient information, such as vital medical information. Moreover, the emergence of electronic clinical records and a standardised record system would allow healthcare facilities to improve the quality of care and would greatly benefit patients, especially those with significant health problems. Demographic and device quality characteristics of users have also shown their significance as variables used to predict nurses’ perception of the ECD system.

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