Intention in Using Nursing Information Systems with Unified Theory of Acceptance Theory Approach and Use of Technology in Kendari Government Hospital

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Abstract

A nursing information system is a combination of computer science, information science, and nursing science designed to assist the management and processing of nursing data, information, and knowledge to support nursing practice and care delivery. Unified Theory Acceptance and Use of Technology (UTAUT) is a model theory used to identify Behavioural Intention in using nursing care information systems. The purpose of this study was to analyse the behavioural intention of nurses on the use of nursing care information systems in the inpatient ward of the Kendari government hospital with the UTAUT approach. The data was obtained using a questionnaire which was distributed directly to nurses, totalling 143 people. Data analysis used rank Spearman with SPSS 16. Relationship between performance expectancy and behavioural intention in nurses = 0.000 (<0.05), and R = 0.435, Relationship between effort expectancy and behavioural intention =0.000 (<0.05), and R= 0.605. The relationship between social influence and behavioural intention = 0.000 (<0.05), and R = 0.671. The results of the study show that performance expectancy, effort expectancy and social influence have a positive and significant effect on behavioural intention in using information systems. Most nurses have a good intention in the use of nursing care information systems (SIAK) in inpatient rooms. Performance EXPECTANCY, effort and social influence have a positive and significant relationship. The most influential variable on the behavioural intention in using SIAK is the social influence variable.

Keywords: *Unified Theory Acceptance*, *Use of Technology*, *Intention in Using Nursing Information Systems.*

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A. INTRODUCTION

A nursing information system is a combination of computer science, information science, and nursing science designed to assist the management and processing of nursing data, information, and knowledge to support nursing practice and care delivery (Hariyati et al., 2018; Kortteisto, Komulainen, Mäkelä, Kunnamo, & Kaila, 2012; Sitepu, 2020).

Documentation with information systems is needed to accurately capture data about nursing practice, and various design considerations to support more complete and accurate nursing documentation (Kim 2011). Nursing documentation is used as a record of planned nursing care and given to patients (Kortteisto et al., 2012; Samadbeik, Gorzin, Khoshkam, & Roudbari, 2015).

The prevalence of using nursing documentation in Jordan reported that nursing history audit notes on paper documentation (71%) were completed faster than computer-based documentation (39.6%) (Akhu-Zaheya, Al-Maaitah, & Bany Hani, 2018).

In Indonesia, the increase in documentation from a paper system to a computer system occurs in five item processes, namely assessment, diagnosis, goals, evaluation, and nursing resume. Nurses' acceptance of electronic system documentation, 49.4% had a low acceptance rate and 50.6% had a high acceptance (Guna, Nita, & Premono, 2020; Hadi, Budianto, & Rizwijaya, 2013).

The difference in the effectiveness of using documentation before and after using a computer is (−3.25% to 1.71%) (Hariyati et al., 2018; Kamil, Rachmah, Irvanizam, & Wardani, 2020). Meanwhile, at the Kendari government hospital, the information system has just begun to be used and has not been fully implemented, 90% of nurses still use manual documentation or paper notes.

B. MODEL THEORY AND HYPOTHESIS

The UTAUT model is a theory-based model developed by Vankatesh et al. (2003). This model describes various factors that influence individual acceptance of an information technology (IT). This unified model is then referred to as the Unified Theory of Acceptance and Use of Technology or referred to by its abbreviation, UTAUT.

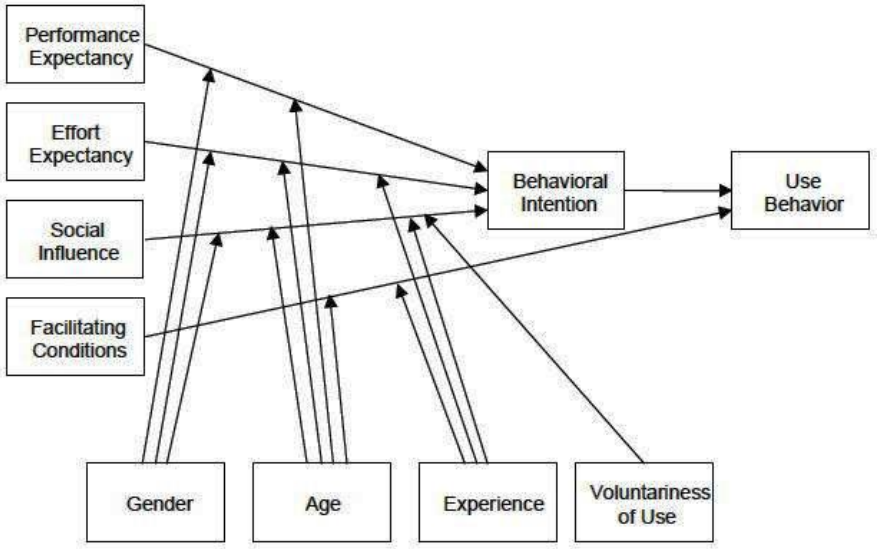

Figure 2. UTAUT Model

There are seven constructs that are always significant as direct influences on intentions or on usage, but only four main constructs are considered to have an important role in direct influence on user acceptance and usage behavior, namely: Performance expectancy, effort expectancy, social influence, and facilitating conditions.

Hypothesis of this research are:

1. There is a relationship between Performance Expectancy and intention in the behaviour of nurses in the use of nursing care information systems
2. There is a relationship between Effort Expectancy and intention in the behaviour of nurses in the use of nursing care information systems
3. There is a relationship of Social Influence on the behavioural Intention of nurses in the use of nursing care information systems

C. METHOD

This research is a quantitative research conducted by distributing questionnaires directly to respondents in the inpatient room.

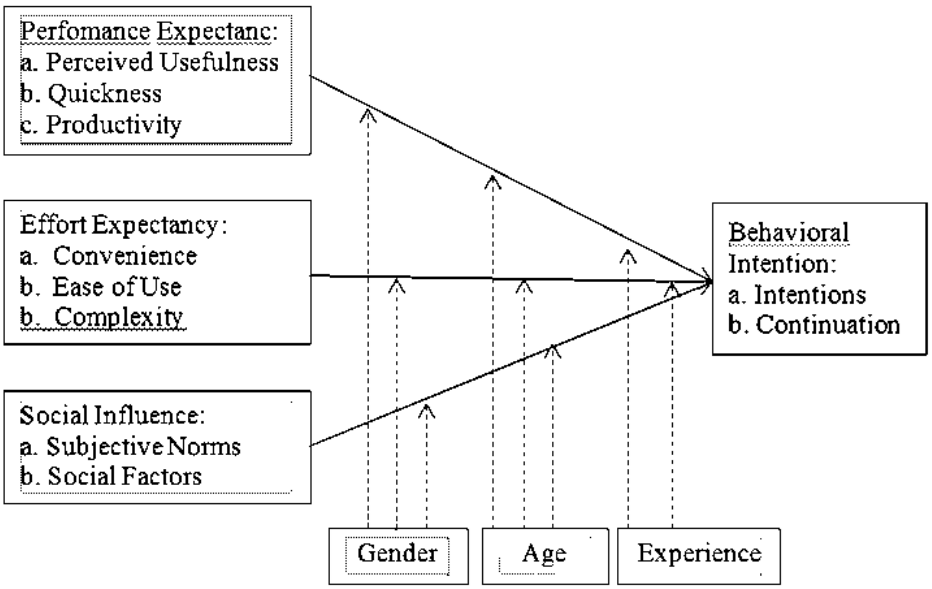

Figure 2. Research Model

Analysis of the data used in this study was the Rank Spearman, which was used to analyse the relationship of research variables.

D. RESULT AND DISCUSSION

The inpatient nurse from the survey obtained data on the characteristics of the respondents in table 1. It is known that there were 143 nurses in the inpatient room. The distribution of respondents obtained demographic data of 36 men (25.5%) and 107 women (74.8%), age of respondents obtained 21-30 years old as many as 85 people (59.4%), 31-40 years old as many as 54 people (37.8%) and 41-50 years old as many as 4 people (2.8%). While the working period was < 1 year as many as 2 people (16.1%), 1-3 years as many as 36 people (25.2%), 3-5 years as many as 24 people (16.8%) and >5 years as many as 60 people (42.0%).

Table 1. Distribution of Respondents' Characteristics by Gender, Age, and Years of Service in the Inpatient Room (n=143)

No.	Characteristic	Frequency (f)	Percentage (%)
1.	Gender		
	Male	36	25.2
	Female	107	74.8
2	Age		
	21 – 30 years old	85	59.4
	31 – 40 years old	54	37.8
	41 – 50 years old	4	2.8
3	Working Experiences		
	< 1 year	2	16.1
	1 - 3 years	36	25.2
	3- 5 years	24	16.8
	> 5 years	60	42.0
	Total	**143**	**100.0**

The results of statistical tests between variables reported that the relationship between performance expectancy and behavioural intention was obtained: -value = 0.000 (<0.05) with a correlation coefficient of 0.435, which means that there is a "moderate" relationship between performance expectancy and behavioural intention. Effort expectancy with behavioural intention obtained: -value = 0.000 (<0.05) with a correlation coefficient (R) 0.605, meaning that there is a "strong" relationship between effort expectancy and behavioural intention. Social influence with behavioural intention obtained: -value = 0.000 (<0.05) with a correlation coefficient (R) 0.671, it means that there is a “strong” relationship between social influence and behavioural intention.

Table 2. Analysis of the Relationship between Performance Expectations, Effort Expectancy and Social Influences with Behavioural Intention

Variable	Coefficient Corelation (R)	ϱ-value
Performance Expectancy	0.435	0,000
Effort Expectancy	0.605	0,000
Social Influence	0.671	0,000

A nursing information system (SIK) helps alleviate problems related to legibility and future use of abbreviations (Blair & Smith, 2012). According to Kenya in 2015 by Warren et al, the development of nursing information systems is faster to use in making clinical client decisions needed by health workers (Widyawati, 2019). UTAUT is a public perception of the importance of using technology-based systems used in health services and changing their behavior at work to achieve work goals (Zhou et al., 2019).

The results of the statistical test showed that performance expectations were significant with the nurse's behavioural intention and had a moderate correlation. Nurses are interested in using information systems because the use of information

systems is easy, faster, requires a short time, saves costs and archive space and increases work productivity. The perception of the usefulness of the nursing care information system is partly felt to be more needed in documenting nursing care (Akhu-Zaheya et al., 2018; Gurley & Rose, 2004; Setiawan, Rudy Latuperissa, Chernovita, & SI). The nursing care information system provides easy exchange of data between health professionals, facilitates communication between officers, makes it easier to measure clinical progress and service outcomes, can compare outcomes with standards and support clinical decisions (Rosyada, Lazuardi, & Kusrini, 2016; Simonetti & Noblin, 2019).

The statistical test relationship showed significant effort expectations with the behavioural intention of nurses in the inpatient room. This is in line with previous research which states that Effort Expectancy has a positive relationship with nurses' intentions to use nursing information systems (Sheikhtaheri, Malekzadeh, Hashemi, & Hashemi, 2020).

These results are in accordance with previous research conducted by Rambe (2020), stating that technology-based documentation helps in meeting documentation standards and quality, facilitates decision making, provides easily accessible information, minimizes potential damage to progress notes, improves information exchange and coordination between nurses or other health teams, documentation can be easily audited, increasing the accuracy of client data, helping to access the progress of client health developments and reducing treatment costs (Rambe, 2020). Effort Expectancy affect nurses' interest in using nursing information systems (Hsu & Wu, 2017).

The results of statistical tests showed that social influence has a significant relationship with the behavioral intention of nurses in the inpatient room. This is in line with previous research which reported that social influence is significant with behavioural intentions towards the use of nursing care information systems (Zhou et al., 2019). The nurse's desire to continue to use the nursing care information system in the inpatient room can come from the influence of others. According to research conducted in Thailand, social effects influence employees to accept or reject new technologies in the healthcare system. Nilashi et al. (2019) found that socio-cultural issues are considered as one of the biggest problems faced by nurses who accept or reject technology in the health care system (Saeidi et al., 2019). Social factors for individuals can encourage individual interest in using information systems in organizations (Fiddin, Kamaliah, & Hardi, 2014). According to Sharma et all, 2017 is an important social influence to be adopted on the development of health care technology in health care facilities (Saengchaia, Pattanapongthornb, & Jermsittiparsertc, 2019).

E. CONCLUSION

The results showed that there was a relationship between performance expectations, effort, and social influence with the behavioural intention of nurses using the nursing care information system in the inpatient room. Then the more the

use of nursing care information systems in the inpatient room, the intention in the behaviour of nurses also increases. Therefore, it is necessary to conduct a joint evaluation between the hospital management, make regulations and make computers with peer-to-peer access to reduce data input errors and improve services to patients. Availability of complete nursing care information facilities can improve the quality of nursing services in hospitals.

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