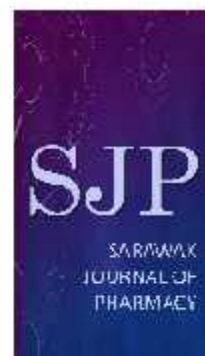




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Perceived usefulness and ease of use of MIMS Gateway

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Abstract

Introduction: Information technology (IT) is emerging in all healthcare setting. MIMS Gateway is one of the information technology implemented in all government hospitals and clinics. However, the technology acceptance among healthcare professionals affected by different factors. This study is mainly to examine the perceived usefulness and ease of use of MIMs gateway among pharmacists.

Method: Technology acceptance model (TAM) consisting of 12 validated questionnaires developed by Davis et al., (1989) used to investigate user acceptance of MIMS gateway. Chi Square test used to look into the inferential statistics. The targeted population of the survey is

toward direct user of the system, pharmacists and pharmacist assistants in Hospital Miri, Sarawak.

Result: Total number of valid response is 44 participants with a gender distribution of approximately 1 (male): 7 (female). About 41 – 56% of users agreed that MIMS gateway helps to increase their productivity, increase effectiveness and it is useful in their job performance. Then, about 20-56% of users claimed that MIMS gateway is easy to use, clear and understandable. Most of the users show positive and neutral attitude towards MIMS gateway.

Conclusion: The study showed that gender, age, years of working experience in government and job titles of the MIMS gateway users do not have significant influential on perceived usefulness and ease of use of MIMS gateway. Another survey can be carried out in the future to find out the user acceptance and satisfaction statement on MIMS gateway use in Hospital Miri.

KEYWORDS: MIMS Gateway, pharmacist, hospital, ease of use, survey

Introduction

Nowadays, Information technology (IT) is emerging in all healthcare setting. The use of modern information technology helps to reduce unwanted clinical errors, such as medication errors and diagnostic errors. Modern IT can be used to support health care professionals by giving updated information which then improve the quality of patient care (1).

Modern hospital information systems (HIS) are normally comprehensive, integrated and specialised information systems. HIS is important in keeping all the data and information of the patient besides medical data record of all medical services provided to the patient. It has the potential to improve the health of patients and the performance of healthcare providers in their working environment (2). From here, Mims Gateway is one of the hospital information systems implemented in all government hospitals and clinics.

Technology acceptance behaviour among healthcare professionals can be affected by many personal factors, such as age, gender and socioeconomic status. The technology use in healthcare offers advantages like time saving for patients and doctors, provide information to them and improve quality of health care. But, the technology acceptance may depend on the characteristics of the individual. Some may perceive innovations of technology like MIMS easier to use and beneficial to them, but some late adopters may have more negative belief towards it (3).

MIMS is one of the Malaysia government health approved drug information reference platform which initially available in printed form and has evolved into online portal, integrated drug knowledge bases within hospital information systems, and mobile applications. MIMS provides drug information, medical news and continuing education resources for medical professionals to improve therapeutic and patient management outcomes. Study will be

conducted to show how medical professionals, pharmacists in specific, understand and use online MIMS gateway. The main objective of this study is to examine the perceived usefulness and ease of use of MIMS gateway among pharmacists in Hospital Miri, Sarawak.

Method

Technology acceptance model (TAM) developed by Davis et al., (1989) used to investigate user acceptance of MIMS gateway. Total of 12 validated questionnaires containing 2 sections; first 6 questions on perceived usefulness and second half of the questions are to access perceived ease of use. Likert scale format incorporated; quite likely, slightly likely, neutral, slightly unlikely and quite unlikely.

The targeted population of the survey is toward direct user of the system, pharmacists and pharmacist assistants in Hospital Miri, Sarawak. For those that have never use the system are excluded from the survey.

Data then analysed using descriptive statistics and association is using Chi-square test or Fisher-exact test, with significant association level of $p < 0.05$.

Result and Discussion

Total number of valid response is 44 participants with a gender distribution of approximately 1:7 male to female. About 10% of the participants are pharmacist assistants and the rest are pharmacists. Two third of the participants are in age range of 20 – 30 years old and remaining one-third of the participants are above 30 years old. There are 2 senior pharmacist assistants with working experience in government setting for more than 40 years. Table 1

shows the distribution and percentages of MIMS Gateway users sorted by their gender, job type, age, and working experience.

Table 1 Participants Demographics

Characteristics	Frequency (%)
Gender	
Male	6 (13.6)
Female	38 (86.4)
Job Title	
Pharmacists	39 (88.6)
Pharmacist Assistants	5 (11.4)
Age	
20 – 30	29 (65.9)
31 – 40	13 (29.5)
41 – 50	1 (2.3)
51 – 60	1 (2.3)
No. of Years Working in Government Hospital/Clinic	
0 – 10	39 (88.6)
11 – 20	3 (6.8)
21 – 30	1 (2.3)
31 – 40	1 (2.3)

Table 2 shows MIMS gateway users' response on TAM questionnaire developed by Davis et al., (1989) in term of percentages and mean score.

Question	Likert Scale (%)					Mean (Score)	Answer
	Quite	Slightly	Neutral	Slightly	Quite		
	Likely	Likely		Unlikely	Unlikely		
Perceived Usefulness							
Q1	5 (11.4)	12 (27.3)	21 (47.7)	5 (11.4)	1 (2.3)	2.7	Neutral
Q2	4 (9.1)	16 (36.4)	18 (40.9)	6 (13.6)	0 (0)	2.6	Neutral
Q3	3 (6.8)	19 (43.2)	16 (36.4)	6 (13.6)	0 (0)	2.5	Slightly Likely
Q4	4 (9.1)	18 (40.9)	13 (29.5)	9 (20.5)	0 (0)	2.5	Slightly Likely
Q5	5 (11.4)	16 (36.4)	16 (36.4)	7 (15.9)	0 (0)	2.6	Neutral
Q6	5 (11.4)	25 (56.8)	10 (22.7)	3 (6.8)	0 (0)	2.3	Slightly Likely
Perceived Ease Of Use							
Q7	4 (9.1)	25 (56.8)	11 (25)	4 (9.1)	0 (0)	2.3	Slightly Likely
Q8	1 (2.3)	18 (40.9)	18 (40.9)	7 (15.9)	0 (0)	2.7	Neutral
Q9	4 (9.1)	22 (50.0)	13 (29.5)	5 (11.4)	0 (0)	2.4	Slightly Likely
Q10	1 (2.3)	21 (47.7)	15 (34.1)	6 (13.6)	1 (2.3)	2.7	Neutral
Q11	2 (4.5)	19 (43.2)	18 (40.9)	11.4 (5)	0 (0)	2.6	Neutral
Q12	4 (9.1)	23 (52.3)	9 (20.5)	7 (15.9)	1 (2.3)	2.5	Slightly Likely

About 41 – 56% of users agreed that MIMS gateway helps to increase their productivity, increase effectiveness and it is useful in their job performance. However, they have not strongly marked if MIMS gateway helps them to accomplish their tasks more quickly, improves their performance or make their job easier. One out of 44 participants strongly disagree the system helps to accomplish their daily task more quickly.

Most of the users show positive and neutral attitude towards ease of use of MIMS gateway. About 20-56% of users claimed that MIMS gateway is easy to use, clear and understandable. Basically, they can assess MIMS gateway easily in their working setting and no extra charges needed for it. However, there is one participant mentioned that MIMS gateway is not flexible and hard to use.

Chi Square test used to look into association between the survey questions with demographics. Result showed that gender, age, years of working experience in government and job titles of the MIMS gateway users do not have significant influence on perceived usefulness and ease of use of MIMS gateway.

In addition, there were few participants excluded from the study because they have no experience in using MIMS gateway which leads to following prediction, the system is not well introduced or promoted among pharmacy staff in Hospital Miri. This could then explain why most of the participants had answered “neutral” for almost 50% of the questionnaire, they neither agree nor disagree that MIMS gateway is helpful or ease to use.

Conclusion

Since this study conducted and did not involve all the pharmacists and pharmacist assistants from Hospital Miri, sample size of the survey could be a limitation.

Another survey can be carried out in the future to find out the user acceptance and satisfaction statement on MIMS gateway use in Hospital Miri. Accessibility to the system should be incorporated into the survey as well to investigate how it influence one perceived usefulness, ease of use as well as acceptance of MIMS gateway system. More participants should be recruited, including other healthcare professionals such as nurses, doctors and dentists in order to create a larger sample size, by using Slovin's Formula to achieve confidence level of 95% and with a margin error of 0.05 (2).

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