THE ADVANTAGES AND DISADVANTAGES OF THE MHEALTH APPLICATIONS AND THE INTENTION TO USE AMONG SMARTPHONE USERS

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ABSTRACT

The use of mobile computing and communication technologies in health care and public health called mHealth could greatly improve health-care delivery processes and bring benefits to the people. However, there is a limited research that looking at the perception of users towards mHealth from the benefits and barriers perspectives. The aim of this study is to explore the perception of Malaysians on the intention to use mHealth whether the usage of it will be a barrier or benefit to them. This quantitative study randomly recruited four hundred eighty respondents who were smartphone users in the six states in Malaysia include Kelantan, Penang, Selangor, Johore, Sabah and Sarawak using purposive sampling. Survey method and a questionnaire were used as a tool for data collection. Consent were obtained from participants before starting the survey. Findings indicate that both perceived barrier and perceived benefits are positively and significantly correlated with intention to use. However, among the two independent variables, only perceived benefits significantly predict respondents’ intention to use. In conclusion, study suggests that people are ready to use the mHealth technology when they feel the technology can benefit them.

Keywords: mHealth, intention to use, perceived benefits, perceived barriers

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1. INTRODUCTION

The advancement in mobile communication technologies have led to the development of mobile-health (mHealth)—the use of mobile computing and communication technologies in health care and public health. Many experts believe that mHealth could greatly improve health-care delivery processes and bring benefits to the people. mHealth intervention can reduce cost, saving time, better accessibility, useful in patients and doctors communication and easier as well as faster to send messages regarding the diseases and health. Adoption of mHealth can improve the lifestyle,
nutrition, health, other physiological states, behaviors and quality of life (Hoque, 2016). It has been regarded as best tools for curing diseases and improving health condition (Kumar et al, 2013; Cole-Lewis & Kershaw, 2010). However, there is a limited research that looking at the perception of users towards mHealth from the benefits and barriers perspectives. The aim of this study is to explore the perception of Malaysians on the intention to use mHealth whether the usage of it will be a barrier or benefit to them.

Since this study will look at the health promoting behaviours using a technology, therefore it has used Health Belief Model (HBM) to measure the health promoting behaviours and looking at the intention to use of the technology. The health belief model, developed in 1950, is used to predict whether people can prevent and become aware of diseases, and it can facilitate resolving problematic behavior and prompting public health responses. Two out of six items in HBM include perceived barriers and perceived benefits. Perceived benefits, which indicate the assessment of the positive benefits of participating in health-promoting behaviour. Perceived barriers, which refer to the beliefs on the difficulty and cost of participating in health-promoting behaviour. According to the reasoned action theory, attitudes and subjective norms result in the formation of behavioral intention, thereby influencing behaviors. Behavioral intention is a necessary step in the behavior implementation process. In other words, behavioral intention refers to the action tendency to adopt a certain behaviour (Fishbein and Ajzen, 1975). Several researches have been done that looking at the relationship between perceived barriers and benefits and behavioural intention in the health promoting behaviours studies. According to Chen et al (2013) study on salt restriction spoon use found that perceived benefits of salt-restriction spoon use indirectly influence the use of these spoons, whereas perceived barriers directly influence salt-restriction spoon use. When perceived barriers increase, the use of salt-restriction spoons decreases substantially. In addition, a study on condom use among female sex workers indicated that intention to use indirectly influences condom use through perceived barriers and perceived benefits, respectively (Zhao et al, 2012). Study in the context of mHealth, researchers found that perceived benefits is a vital factor which determines the adoption of mHealth. Patients thought the app appeared straightforward and easy to use. Patients found benefits in the portability of health information when interacting with physicians and emergency medical technicians (DiDonato et al, 2015). Besides, study done by Lee & Rho (2013) on the acceptance of mobile health monitoring services found that the users perceived benefits and the behavioural intention on the usage of the mobile health was higher than non-users.

Therefore, understanding the benefits and barriers that encourage and discourage individuals from engaging in health promoting activities by using technology and the acceptance that leads the intention to use is crucial to explore in this study.

2. METHODOLOGY

Four hundred eighty respondents who were smartphone users and knowing about mobile health systems or ever experience/ever heard with/about mobile health system recruited in this study. This quantitative study collating data from the six states include Kelantan, Selangor, and Penang, Johore from the West Malaysia and Sabah and Sarawak from the East Malaysia using purposive sampling. Data were collected between November 2015 and March 2016. Survey method and a questionnaire were used as a tool for data collection. A set of questionnaire includes 4 sections comprise respondent’s socio demographic background, perceived benefits, perceived barriers and intention to use. These measurement items were adopted and modified from one or two sources to fit the needs and purpose of the questions. If the participants agreed to participate, they have to sign an informed consent form and then they were asked to complete the questionnaire accordingly. Finally, data were analysed using the statistical software package SPSS Version 21 and several analysis were conducted includes frequency, Pearson correlation and multiple regression analysis.
3. RESULTS AND DISCUSSION

3.1. Socio-demographic background of respondent

Table 1 shows the summary statistics for the socio-demographic background of the respondents includes sex, age groups, level of education, and the health problems. The percentage of female respondents is slightly higher, which accounts for more than half of the total respondents surveyed (58.5%). Majority of the respondents were in the age group of 21-30 years (51.3%), followed by age group of 31-40 years (19.0%), age group of 18-20 years (14.6%), age group of 41-50 years (11.7%) and the least was the age group of 51-60 years (3.5%). Most of the respondents having tertiary education which accounts for almost half of the total respondents surveyed (66.0%). The lowest percentage of respondents was with primary education (10.6%). In terms of the health problems, most of the respondents (75.0%) mentioned that they do not have health problems, and followed by mentioning that they had health problems (18.8%) and do not know about their health problems (6.2%). It can be speculated that majority of the respondents did not have health problems because majority of them were below 40 years old.

<table>
<thead>
<tr>
<th>Demographic / Social Variables</th>
<th>Categories</th>
<th>Frequency N=480</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td>Male</td>
<td>198</td>
<td>41.3</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>281</td>
<td>58.5</td>
</tr>
<tr>
<td>Age (Years)</td>
<td>18-20</td>
<td>70</td>
<td>14.6</td>
</tr>
<tr>
<td></td>
<td>21-30</td>
<td>246</td>
<td>51.3</td>
</tr>
<tr>
<td></td>
<td>31-40</td>
<td>91</td>
<td>19.0</td>
</tr>
<tr>
<td></td>
<td>41-50</td>
<td>56</td>
<td>11.7</td>
</tr>
<tr>
<td></td>
<td>51-60</td>
<td>17</td>
<td>3.5</td>
</tr>
<tr>
<td>Level of education</td>
<td>Primary</td>
<td>51</td>
<td>10.6</td>
</tr>
<tr>
<td></td>
<td>Secondary</td>
<td>112</td>
<td>23.3</td>
</tr>
<tr>
<td></td>
<td>Tertiary</td>
<td>317</td>
<td>66.0</td>
</tr>
<tr>
<td>Health problems</td>
<td>Yes</td>
<td>90</td>
<td>18.8</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>360</td>
<td>75.0</td>
</tr>
<tr>
<td></td>
<td>Don’t know</td>
<td>30</td>
<td>6.2</td>
</tr>
</tbody>
</table>

Table 2: Pearson correlation and multiple regression analyses

<table>
<thead>
<tr>
<th>Variable</th>
<th>M</th>
<th>SD</th>
<th>Correlation with intention to use</th>
<th>b</th>
<th>SE b</th>
<th>β</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intention to Use</td>
<td>3.54</td>
<td>1.19</td>
<td>1.00</td>
<td>1.70</td>
<td>.10</td>
<td></td>
</tr>
<tr>
<td>Perceived barriers</td>
<td>3.03</td>
<td>1.50</td>
<td>.57**</td>
<td>-.03</td>
<td>.05</td>
<td>-.03</td>
</tr>
<tr>
<td>Perceived benefits</td>
<td>3.55</td>
<td>1.54</td>
<td>.67**</td>
<td>.54*</td>
<td>.05</td>
<td>.70*</td>
</tr>
</tbody>
</table>
Pearson correlation and multiple regression analyses were conducted to examine the relationship between intention to use, perceived barriers and perceived benefits. Table 2 summarizes the descriptive statistics and analysis results. Findings indicate that both perceived barrier and perceived benefits are positively and significantly correlated with intention to use. A multiple linear regression was calculated to predict intention to use based on respondents’ perceived barriers and perceived benefits. A significant regression equation was found (F(2,477) = 195.288, p< .000), with an R2 of .45. This indicates that 45% of variability in intention to use is explained by the two independent variables (IV). However, among the two independent variables, only perceived benefits significantly predict respondents’ intention to use.

Based on the mentioned results, this study found the consistency with other studies (DiDonato et al, 2015; Lee and Rho, 2013) that perceived benefits is a significant factor that can promote the intention to use the mHealth. This can be postulated that the encouragement of using the apps emerged when the users found the apps can give more benefits compared to the risk to them. In addition, this study involves young generation which has a vast knowledge and accessibility about using a mobile phone, therefore they were perceived benefits of the usage of mHealth. Deng, Mo and Liu (2014) posited that mHealth provides personalized and tailored the healthcare services for the young citizen. Meanwhile, perceived barriers was not significant to predict the intention to use because when the users found the technology is not benefit to them and they are having so many challenges for them to use it, they will ignore the technology and not get the technology involved in managing their daily lives especially in their health monitoring (Narasimhan, 2013).

4. CONCLUSION

In conclusion, study suggests that people are ready to use the mHealth technology when they feel the technology can benefit them. Researchers, educators and healthcare providers need to educate the people especially non-user about this technology and encourage them to use it regularly in their daily routine. Besides, healthcare providers need to occupy themselves with a best knowledge and practices to handle this technology. For the marketers and technology developers need to focus on robustly establish the ability of mobile technology-based interventions to improve health-care delivery processes to make it more beneficial to the users.

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REFERENCES


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