



ASSESSMENT OF KNOWLEDGE AND PERCEPTION OF mHEALTH APPLICATIONS AMONG NURSES

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ABSTRACT

Background: mHealth (or mobile health) is the provision of health services through mobile technologies. The key applications of mHealth in developing countries are education and awareness, remote data collection, remote monitoring, communication and training for healthcare workers, disease and epidemic outbreak tracking and diagnostic and treatment support¹. **Aim and objectives:** 1.To assess the knowledge and perception of mhealth applications among nurses. 2.To correlate knowledge and perception of mhealth applications among nurses. 3. To associate the demographic variables with knowledge and perception of mhealth applications among nurses. **Methodology:** A Quantitative-evaluative study was conducted among 50 nurses at selected settings in Chennai. A non-probability convenient sampling technique was used. Data was collected online using a self-reported questionnaire, through a Google form. A survey link was sent to the respondents, via email and WhatsApp groups. **Result:** The findings indicated that 48% of nurses had poor knowledge and 44% had a low perception of mHealth. The correlation coefficient value, $r = 0.435$, revealed

that there was a positive correlation between knowledge and perception at a $p < 0.01$ level of significance. There was no statistically significant association of knowledge and perception with demographic variables. **Conclusion:** mHealth is now used in the nursing field to reduce the time nurses spend on other tasks, such as writing reports or making medication rounds. There are a lot of positive outcomes from using mHealth.

Keywords: knowledge, mHealth (mobile health), nurses, perception.

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I INTRODUCTION

“Good health and good sense are two of life's greatest blessings- PubliliusSyrus”²

A mobile phone is a multipurpose and powerful device capable of performing several tasks that are beyond its primary purpose of communication. There is a lot of hype around mobile technology, especially smartphones, and many new and innovative functionalities and/or apps that are capable of addressing needs in new areas are being launched daily³.

mHealth (or mobile health) is defined as providing health services through mobile technology. mHealth uses wireless devices to monitor health status. The service is simple to use and sends alerts and reminders through inbuilt mobile sensors or apps to capture and interpret clinical data. Developing countries are using mobile technology to address their health needs. The mHealth field is remarkably dynamic, and therefore, the variety of applications being designed is consistently increasing⁴.

mHealth is a component of eHealth. For the survey, the Global Observatory for eHealth (GOe) defined mHealth or mobile health as medical and public health practice supported by mobile devices, such as mobile phones, patient monitoring devices, personal digital assistants (PDAs), and other wireless devices (WHO, 2011). In 2016, it was estimated that more than 3.2 billion of mHealth apps were downloaded, which was 7% more than the year before (research guidance, 2016)⁵.

mHealth applications are software that can enable users to search for information about specific diseases, manage their disease and track their health and collect health-related data. These applications can use some of the sensors that have been mentioned earlier so that they can "communicate" with the consumers⁶.

mHealth is described as a developing technology that will give the users the ability not only to communicate with each other (medical staff with no medical staff or medical staff with other medical staff) but it could be used to support their knowledge, as well as it is helping them to keep reminders. More specifically, in their systematic review, they selected 42 articles and found that using this technology assists medical staff in making better decisions (Free et al, 2013)⁷.

mHealth is now used in the nursing field to reduce the time nurses spend on other work, such as writing reports, or making medication rounds. By using mHealth they have a lot of positive outcomes, but at the same time, they have to address some issues that they might come out of that use⁸. Nurses are responsible for the patients' treatment and training; this includes not only medication but also the best usage of patients' tools such as mHealth

apps. The presented study aims to assess the knowledge and perception of mHealth among nurses.

Statement of the problem

A study to assess the knowledge and perception of mHealth applications among nurses at selected settings, Chennai.

Objectives

1. To assess the knowledge and perception of mHealth applications among nurses.
2. To correlate knowledge and perception of mHealth applications among nurses.
3. To associate the demographic variables with knowledge and perception of mHealth applications among nurses.

II MATERIALS AND METHODS

The research approach was Quantitative-evaluative in nature. The study was conducted among 50 nurses. The population of the study was nurses who were in the age group of 20 - 50 and above, from selected settings in Chennai. Samples were selected through a non-probability convenient sampling technique. Respondents who agreed to participate in the study were instructed to complete the questionnaire.

The demographic variables were collected using a structured questionnaire. The multiple-choice questions were framed to assess knowledge and a rating scale was used to assess the perception of the nurses. Data was collected online using a self-reported questionnaire, sent to 50 respondents, in the form of a survey link through a Google form via email and WhatsApp groups.

Data Collection Instruments

The tool was compiled based on an extensive review of the literature. The questionnaire consisted of three sections.

Section I- Demographic Variables: Gender, age, educational qualification, designation, years of experience, income per annum, type of phones used, previous knowledge on mHealth, mHealth app used.

Section II- Knowledge Variables: The second section assessed nurses' knowledge of mHealth. This section included 15 items on meaning, goal, available device, purpose, pros and cons, barriers, benefits for the patient, health professionals and healthcare organisation, emerging trends, mHealth aids and apps.

Knowledge items were prepared as multiple-choice questions. Correct answers were assigned a score of one and incorrect responses were given a score of zero. The total score for knowledge ranged from zero to 15, with scores indicating a high, moderate, and low level of knowledge on mHealth. Items were evaluated for internal reliability; the coefficient was 0.73.

Section III- Perception Variables: The third section of the tool assessed the perception of nurses about mHealth applications. This section consisted of 15 statements related to perception, using the rating scale.

In the section on perception, respondents were asked to respond “agree, neutral and disagree to the items. A score of one was given to answers that reflected high perception, moderate perception, and low perception. The total score ranged from zero to 15, with high scores indicating good perception.

Data Analysis

This study employed primarily descriptive and inferential statistics for data analysis. Descriptive analysis was used to tabulate the frequency and percentage of demographic variables, knowledge and perception. Pearson correlation was used to assess the relationship between knowledge and perception. A Chi-square test was used to assess the knowledge and perception with demographic variables. SPSS software was used for analysis.

Ethical Considerations

On the first page of the online questionnaire, respondents were informed about the background and objectives of the study; that they were free to withdraw at any time without giving a reason, and that all information and opinions provided would be kept anonymous and confidential. Online informed consent was obtained before proceeding with the questionnaire.

III RESULTS

Demographic variables

The majority (54%) of the samples were between the age group of 20 - 29 years. Of the participants 92% were female; 62% were B.Sc. Nursing Degree holders; 54% were staff nurses, 64% had 0-9 years of experience, and 32% of the samples had <1 lac income per annum; 80% of the samples used Android Phones; 72% of them had previous knowledge of

mHealth; 24% of the samples' sources of information was from books and 68% of the samples used the mHealth app.

Knowledge on mHealth

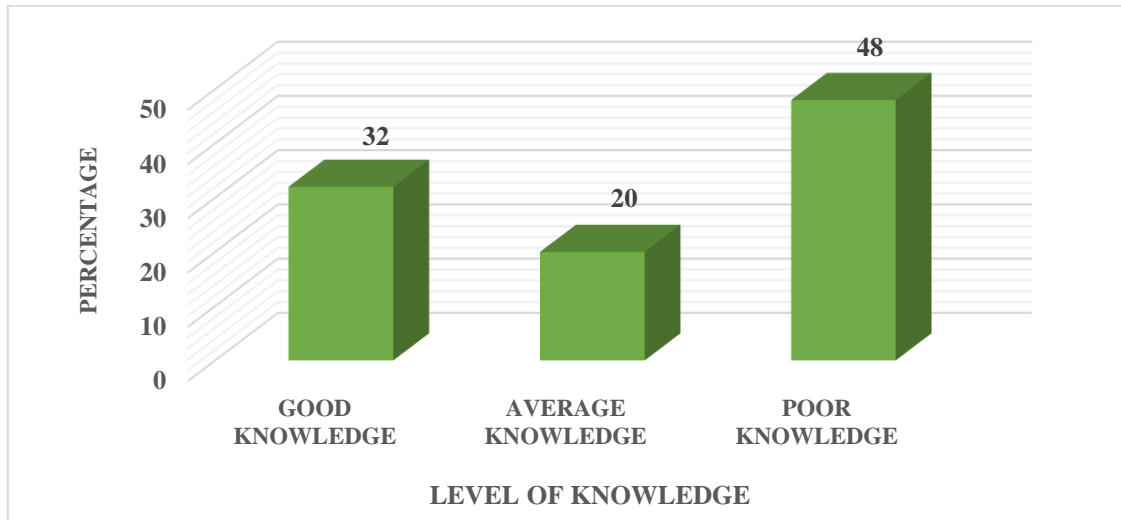


Figure 1: Overall percentage of nurses knowledge on mHealth

The above figure shows that the majority (48%) of nurses had poor knowledge, 20% of them had average knowledge and 32% of the nurses had poor knowledge of mHealth.

Perceptions about mHealth

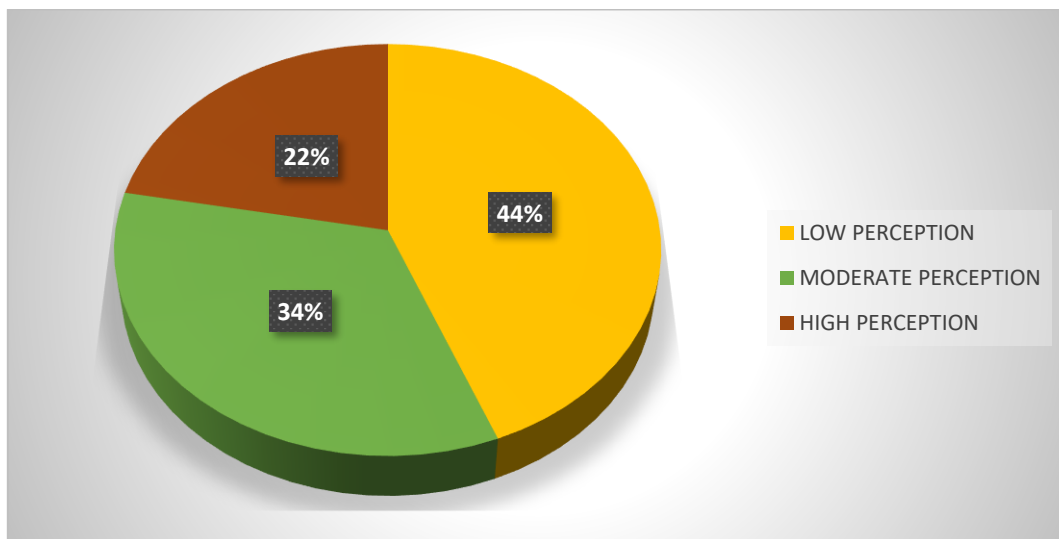


Figure 2: Overall percentage of nurses perception about mHealth

This figure shows that the majority (44%) of the nurses had low perception, 34% of them had moderate perception and 22% of them had high perception.

*Correlation between knowledge and perception of nurses***Table 1: Correlation between knowledge and perception among nurses of mHealth applications****N = 50**

Variables	Correlation coefficient
Knowledge	0.002
Perception	$r = 0.435^{**}$

** Correlation is significant at the 0.01 level S - Significant NS - Not Significant* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 1 shows that there was a moderate positive correlation between knowledge and perception at $p < 0.01$ level of significance.

Association of knowledge and perception with demographic variables

The study findings showed that there was no statistically significant association between knowledge and perception with gender, age, educational qualification, designation, years of experience, income per annum, type of phones used, previous knowledge on mHealth, mHealth app used.

IV DISCUSSION

The findings indicate that the majority of nurses (48%) had poor knowledge, 20% had average knowledge and 32% had good knowledge. Regarding perception, the majority of nurses (44%) had low perception, 34% had moderate perception, 22% had good perception. The correlation coefficient, $r = 0.435$, between knowledge and perception revealed that there was a moderate positive correlation between knowledge and perception at $p < 0.01$ level of significance. It showed that the nurses' poor knowledge of mHealth translates into low perception.

Thus, the findings suggest that knowledge of mHealth among nurses is low. Policy and public health interventions for awareness creation and promotion of the use of mHealth, as well as its possible integration into the mainstream healthcare system, are a timely requirement.

V CONCLUSION

mHealth has an impact on the healthcare ecosystem in emerging countries and can achieve positive results in India too.⁹ This technology can help in improving accessibility,

reduce healthcare costs and increase the productivity of healthcare workers in India. There is an impact of mobile health in the Indian health sector. Mobile Health technology has developed into an important and innovative instrument of information and communication technology with which the health of everyone can be influenced.

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X CONTRIBUTORS:

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