Original Article

Perception and Experience of Health Workers on Mobile Health at Prince Abubakar Audu University Teaching Hospital Anyigba, Kogi State

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Abstract

Background: Mobile health is an essential tool for an efficient and quality health care services, with potential to increase access for the clients and improved knowledge and skills for the health workers. This study aimed to explore the perceptions and experiences of health workers on mobile health at PAAUTH Anyigba, Kogi State. An explorative qualitative design using an in-depth interview was used.

Materials and Methods: The target population constituted all the health workers working at Prince Abubakar Audu University Anyigba, Kogi State. Required number of participants were selected for the study until the data reach saturation level. An in-depth interview guide was used to collect the data. The data was analyzed using the thematic content analysis.

Results: The findings indicated that a significant number of participants appreciated the opportunity provided by mobile health (mHealth) to access health-related information at any time and from any location. But, they are concerned about the lost of very useful information when the device developed problem. The participants also asserted that use of mHealth will significantly improve the patient's outcome as it also improve significantly the knowledge and skills of health care workers. Unstable power supply in the country has been opined by many participants as the greatest barrier to use of mobile health.

Conclusion/Recommendations: It was recommended that health care facilities should make use of the solar energy alternative to promote the use of mobile health for efficient health care services.

Key words: Perceptions, Experiences, Health workers, Mobile health

Introduction

Mobile health (mHealth) involves the use of mobile communication technology such as smartphones, tablet computers, and personal digital assistants on the part of patients, as well as the use of wearable devices such as smart watches designed to provide health information about their wearer etc.[1] mHealth describes the use of mobile and wireless communication technologies to improve healthcare delivery, outcomes, and research.[2] mHealth includes the use of simple capabilities of a mobile device such as voice call and short messaging service (SMS) as well as more complex applications designed for medical, fitness, and public health purposes.[3] Certainly, Mobile health will play a significant role in involving patients in self care as smartphone ownership is increasing globally.[4]

Health workers are a diversified group of different professionals. Many factors influence their readiness to use technology, including their age, level of education, previous experiences, availability of essential amenities etc. There is growing recognition that mobile health has the potential to improve the services of frontline health workers. Since after the covid-19 pandemic, many developed nations now provide healthcare services online through e-hospitals or internet hospitals. They have streamlined the hospital procedures, aiding non-clinical procedures, such as appointment registration and payment. Several hospitals provide online consultations, prescriptions and drug delivery, and have move many hospital procedures online.[5]

Previous studies have demonstrated the different benefits of mobile health in health sector. These benefits include increasing accessibility for hard-to-

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reach populations, efficiency, and the quality of healthcare and reducing queuing and waiting time at the hospital.[6] This study intend to use a qualitative approach to explore health workers' perceptions and experiences of mobile health. It is our hope that the findings of this study will provide insights for policy regarding the adoption of mobile health in our tertiary health institutions. Additionally, there are very, if any research in this part of the country that explored the perceptions and experiences of mobile health among health workers. This study aimed to explore the perception and experiences of health workers on mobile health at Prince Abubakar Audu University Teaching Hospital (PAAUTH)Anyigba.

Materials and Methods

An explorative qualitative design using an in-depth interview was used to explore the perception and experiences of health workers on mobile health at Prince Abubakar Audu University Teaching Hospital, Anyigba Kogi State. The design is appropriate as it allow for one-on-one interaction with the participants, which can generate more insightful responses especially regarding sensitive issues.

The target population constitute all the health workers working at Prince Abubakar Audu University Anyigba, Kogi State. To be eligible for participation in this study, the health worker must work for at least one year at the study site and must consent to participate in the study. Eighteen participants from various professions, age groups and socio-economic status were selected for the study until the data reach saturation level. An in-depth interview guide was used to collect the data. The Indepth interview guide comprised of open-ended questions that aided in collection of information about the perception and experiences of health workers on mobile health. The guide was adapted from the work of Harman on the perception of Tanzanian health workers towards the use of mobile application. The guide comprised of sixteen items. The interview took place at the respondents' units and run between 45 and 60 minutes. Participants were first provided with the detail information about the purpose of the study. Their consents were also obtained. The interviews were audio-recorded, and transcribed verbatim. Important phrases and sentences that were of relevance to the objectives of the study were highlighted and assigned a code. Codes that have common elements were grouped to form themes; which were revised for clarity and appropriateness. The data saturation was reached after interviewing 18 participants.

The data was analyzed using the thematic content analysis.Research ethical clearance was obtained from the Research ethical committee of Prince Abubakar Audu University Teaching Hospital Anyigba, Kogi State. Informed consent was also obtained from the study participants. Confidentiality of the information collected was ensured.

Results

Table 1 shows that eighteen health workers participated in the study. Significant proportion of the participants were between the ages of 40 and 49, with the mean age of 41.3. The male and female gender were of equal proportion (50% each). Nurses and medical doctors have the highest number of participants, 38.9% and 33.3% respectively. Significant proportion of the participants have worked for between 10 and 19 years.

Table 2 shows the perceptions of health workers at Prince Abubakar Audu University Teaching Hospital Anyigba Regarding the use of mobile health. Using the thematic analysis, six themes and nine subthemes emerged. Most of the participants explained that the concept mobile health is new to them. But when they got to know that it is the act of using mobile phone or tablet to provide health care, including phone calls or text messaging, they immediately responded that they are using mobile health. Many participants like the opportunity accorded by mHealth to access information at any time and at any place. But, they are

Table 1: Socio-demographic characteristics of the health workers(n= 18)

Variables	Frequency	Percentage
Age (years)		
<30	1	5.6
30-39	7	38.9
40-49	8	44.4
50 and above	2	11.1
mean=41.3		
Gender		
Male	9	50.0
Female	9	50.0
Professional group		
Medical Doctor	6	33.3
Medical Laboratory Scientist	2	11.1
Nurse	7	38.9
Nutritionist	1	5.6
Pharmacist	2	11.1
Years of working experience		
<10	6	33.3
10-19	7	38.9
20-29	4	22.2
>30	1	5.6

Table 2: Perception of health workers on mobile health

Themes and Subthemes	Illustrative quotes
Feeling about mHealth	
Initial feeling	"I was not very familiar with the concept mobile health. But I later get to know that mere texting a patient about his appointment using mobile phone is also part of mobile health"(Participant #11,Nurse)
Change in feeling	"Indeed, there was a change in feeling over time. With increase in knowledge and skills in using technology for health care, I feel mHealth is a very useful tool for a quality health care delivery"(Participant #7, Medical doctor)
Likes and dislikes	
Likes	"I like the way mHealth make patients' information available at any time and any place. This make it easy to make proper diagnosis and prescribe appropriate treatment"
Dislikes	"Ah! It was very disheartening when I lost vital information on my tablet when it got faulty. If not because of situations like this one, there is nothing to dislike about mobile health.(Participant #14, Medical laboratory Scientist)
Client's view	
Client's feeling	"Certainly, the patients are vey happy seing a health care professional using mobile phone or tablet to confirm some information regarding their care. Many expresses their feelings of delightness for being certain that the health care professional can not make mistake in providing care to the clients"(Participant#1, Medical doctor)
Client's outcome	"Unlike before, most of the time now I use my mobile phone to call or text clients as reminder for their immunization schedule. The number of clients attending our immunization sessions has greatly increased."(Participant #10, Nurse)
Improve in knowledge	"I now use mobile phone to access information related to patient.s care and avoid making mistake. It has definitely impacted positively and impr oved my knowledge and skills in health care"(Participant #2, Medical doctor)
Most benefitting group	"The mobile health is most useful for all the health care professionals. Provided you have the requisite knowledge and skills to use the technology, you will definitely benefit from the technology. Equally your clients will also benefit from the technology, at least by getting the correct drugs."(Participant#13 ,Pharmacist)
Perceived useful technology	"I would like to see an application developed in a mobile phone that can provide great assistance to us as Medical Laboratory Scientists. It may be availabl e now, but I haven't come in contact with such application."(Participant #15 ,Medical Laboratory Scientist)
Influencing factors	
Motivating factors	"The fact that one can access information any where and at any time is really encouraging for one to make use of mobile phone or any other device for health care services. Unlike in the past, where one has to go to the library and search for textbooks/journals, the use of internet has really simplified everything".(Participant #3 , Medical doctor)
Hindering factors	"Very epileptic power supply! It is very unfortunate in this country that one can hardly get 6 hours power supply without interruption. Many a times I wanted to use my mobile phone, but when I checked the battery is very low. If only adequate power supply can be restored in this country, the mobile health can greatly improve the health care delivery system in Nigeria."(Participant #6, Nurse)

concerned about the lost of very useful information when the device developed problem. The participants also asserted that use of mHealth will significantly improve the patient's outcome as it also improve

Table 3: Experiences of health workers on mobile health

Themes	Illustrative quotes
Intention to use mHealth	"If you look at what is happening in other sectors like the banking sector for example. Everything can be done with the mobile phone -transfer, purchase, etc. It will be very useful in the health sector if we can make use of mobile devices to provide health care services. Not only me, many of my colleagues too are willing to use mobile devices to improve the clients' care"(Participant #2, Medical doctor)
Motivating factors	"You see, with the aid of mobile phone I can do a lot of my work any where and at any time. Equally, I can access relevant information at any time and at any where. This is really motivating for one to use mobile phone in health care services"(Participant #, Nutritionist)
Barriers	"Do I have to mention it? We all know the problem of usi ng electronic gadgets in Nigeria-unstable power supply. The most unfortunate thing is that the situation is becoming worth day by day. There is no barrier to use of mobile devices in Nigeria like epileptic power supply"(Participants #12, Nurse)
Preferences	"How I wish to have a mobile health technology that can take care of most of my activities. An application that I can use to take patient history, input the signs and symptoms and give the nursing care plan. And after providing the updated patient's complain, it will give me the needed intervention for that particular patient. Very soon we will have such type of technology"(Participant #4 , Nurse)
Experiences	"It was actually a satisfying experience! By and large, the use of mobile phone or tablet to provide health care services simplify our tasks. You take little time to provide many health care services to your patients. The patients too have access to their hea lth care providers at any time. All they need to do is to call their health care provider when the need arise."(Participant #18, Pharmacist)

significantly the knowledge and skills of health care workers. Unstable power supply in the country has been opined by many participants as the greatest barrier to use of mobile health.

Table 3 shows the experiences of health workers regarding the use of mobile health at PAAUTH Anyigba. Using thematic analysis, five themes emerged. Most of the participants expressed their willingness to use mobile health because of its potential benefits in improving the quality of health care services. Ease of use and access to information at any time is an encouraging factor to many participants' use of mobile health. Many participants submitted that unstable power supply is a hindering factor or barrier to efficient use of mHealth in our facilities.

Discussion

Recently, vital change has taken place in healthcare delivery systems due to the availability of mobile technologies. The use of mobile technologies can help to reduce many barriers to efficient healthcare services such as attitudinal and geographical barriers to seek treatment, lack of qualified personnel, and providers' workload. All the participants involved in this study have submitted the use of mobile phone or tablet to provide health care services. Many among the participants initially were not familiar with the concept mHealth although they were actively practicing it. Majority of the participants in this study have indicated the potential benefits of mobile health like increasing access to health care services and improved knowledge and skills among the health workers. This finding is in consonant with many previous studies.[7]

Their findings revealed that healthcare workers reported a high level of interest, motivation and positive attitudes towards the use of mobile health. They also reported that mobile health could help in bringing uniformity in diagnosis and management of diseases, enabling remote supervision, helping verification of health workers' diagnosis and treatment; and increasing patients' trust in the treatment.

Despite the availability of efficient healthcare services in our tertiary health institutions, there is a huge gap between the number of individuals who need the healthcare services and those who receive it. And this is

where the mHealth has the potential to address the problem. Most of the participants in this study have demonstrated their willingness to adopt mHealth for improved health care services. Many of the participants have also expressed the positive feelings of their clients when they are making use of mobile phone or tablet to provide health care services. This finding agreed with the findings of many previous studies.[8]Their findings also revealed the readiness of health workers to adopt mobile technology in health care services.

Various studies conducted in developed nations have demonstrated that mobile health can be used effectively to promote healthcare delivery services. However, the use of mobile health is not without many challenges especially in developing countries. Many participants in this study opined that having adequate and stable power supply is the major challenge to use of mobile health in our health facilities. There is growing concern by many participants that the situation of power supply in Nigeria is becoming worth day by day. This finding, however, is in contrast with the findings of some previous studies especially those in developed nations.[9] Their findings revealed that the main facilitators to mobile health adoption are possible health benefits for patients, ease of use, educating patients and their healthcare providers, credibility and reducing healthcare costs. It further demonstrated that the barriers to adoption are technical issues, privacy and confidentiality issues and lack of awareness.[10]

Conclusion

Health workers who participated in this study affirmed that mobile health possesses significant potential to enhance health service delivery by improving access and promoting the quality of care. The major challenge to use of mobile health in Nigeria was adequate and stable power supply. Many professionals believed that developing applications at ease the tasks of health workers will promote and increase adoption of mobile health in Nigeria.

Conflict of interest

None declared

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