e-HEALTH READINESS OF HEALTH CARE INSTITUTIONS IN BOTSWANA

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ABSTRACT
e-health is currently a noteworthy issue worldwide, in Africa and indeed in Botswana. e-health systems include the applications of information and communications technology to improve health care services delivery, support and education. Many countries around the world including Botswana, are in the process or have already adopted the use of such technology in their health care sectors. This is done in most instances without first gauging e-health readiness of the health care workers who are meant to use such technology as well as the facilities in which such technology will be rolled out to. e-health readiness can be defined as the preparedness of health care institutions or communities for the anticipated change brought by programs related to information and communications technology. The objectives of this study were to measure e-health readiness of health care institutions in Botswana as well as identification of personal attributes that may influence readiness of the potential users of e-health. A close-ended self administered questionnaire was used to collect data from a total of 87 health care workers at two hospitals in Botswana. The questionnaire contained 19 questions covering 3 domains (aptitudinal readiness, attitudinal readiness and infrastructural readiness). The responses were rated on a 5-point Likert-type scale ranging from strongly disagree to strongly agree. The questionnaires were then coded and transcribed into the Statistical Package for Social Sciences (SPSS) version 21.0 for analysis. Results in this study highlighted that the participating institutions illustrated a varying degree of e-health infrastructural readiness. Participants in the study demonstrated a high level of e-health attitudinal readiness but also a low level of e-health awareness. This study sets a tone for a more comprehensive study to assess the level of e-health readiness in Botswana.

KEY WORDS

1. INTRODUCTION
The application of information and communications technologies (ICT) in the health care sector or e-health, is increasingly being adopted by many governments across the world. e-health is recognized as an innovative way to make the health services more effective and efficient [1]. The government of Botswana is among those who have seen the need to embrace the use of such technology. It is worth noting that the implementation of e-health is often cited as being costly [2]. As such, any government intending to invest in e-health needs to ensure that the implementation of the technology becomes a total success. It is important to note that the unsuccessful implementation of any technological innovation is tantamount to great losses in terms of time, money and effort [3].

Successful implementation of e-health initiatives is never easy and it is cited as having a failure rate of up to 70% [4]. Majority of the failed e-health implementations may have nothing to do with the technology but more to do with the lack of readiness to use the technology. This is because the adoption of e-health initiatives is usually done in some instances without first gauging e-health readiness of the health care workers who are meant to use such technology as well as the facilities in which the technology will be rolled out to. e-health readiness has been defined as the preparedness of health care institutions or communities for the anticipated change brought by programs related to information and communications technology [5]. It is therefore important that an e-health readiness assessment be carried out prior to the implementation of any e-health initiative. This will give the implementers a chance to understand and mitigate the challenges that are likely to be presented by e-health implementation. e-health readiness can be measured on the basis of infrastructural readiness, aptitudinal readiness(depth of skills and capability to use e-health solutions) as well as attitudinal readiness (willingness to use current and future e-health solutions).

The objectives of this study are to measure e-health readiness of health care institutions in Botswana as well as identification of personal attributes that may influence readiness of the potential users of e-health.
2. METHODS

A close-ended self administered questionnaire was used to collect data from the participants in two hospitals in Botswana (hereafter referred as Facility A and Facility B). Facility A is on the northern side of the capital city Gaborone whereas Facility B is on the southern side. All the employees at the two hospitals were written a memo inviting them to participate in the study. The self administered questionnaires were then distributed only to those health care workers on duty during the day that the survey was being conducted. The target population for the study comprised of nurses, doctors, pharmacists, radiologists, laboratory technicians, dental therapists as well as non-clinical staff such as archivists, hospital managers and administration staff.

To achieve the objectives of this study, the e-health readiness questionnaire used was developed based on the assessment tools by Khoja et al [5]. The questionnaire was developed in Both Setswana and English. The questionnaire contained 19 questions covering 3 domains (aptitudinal readiness, attitudinal readiness and infrastructural readiness). The responses were rated on a 5-point Likert-type scale ranging from strongly disagree to strongly agree. A pretest was done to verify the clarity of the questions. Five employees working at Facility A (3 nurses, 1 doctor and 1 dental therapist) pretested the questionnaire. Only after recommendations and corrections was the questionnaire distributed to the participants. The questionnaires were coded and transcribed into the Statistical Package for Social Sciences (SPSS) version 21.0 for analysis.

3. RESULTS AND DISCUSSION

A total of 87 health care workers participated in the study, fifty participants from Facility A and 37 from Facility B. Fig.1 illustrates that in each of the facilities, 50% or less of the participants agreed that they did understand what e-health was. This can only be understood to mean that there is still a lot of work that needs to be done in educating and sensitizing health care workers at these 2 health care facilities about e-health. Liu Sheng et al have clearly demonstrated that training of potential users before e-health initiatives are implemented can have a positive impact on their perception of e-health. It is worth mentioning that this low level of e-health awareness is happening in the backdrop of a government that has fully embraced e-health [7]. This turn of events can only be explained by the fact that there is still a high shortage of individuals in sub-Saharan Africa, qualified enough to train health care workers on e-health awareness [8]. This status will ultimately result in it taking time for all the health workers in a country to be aware of e-health. It must be the aim of the government to ensure that all health care workers are trained and sensitized on e-health before embarking on a large scale adoption of e-health initiatives. It only makes sense as this are the individuals who will be responsible for ensuring continuity of the implemented e-health initiatives.

Fig.1: e-health awareness levels of health care workers

It is also worth noting that a large majority of the participants at the two facilities, agreed to the fact that they were knowledgeable in the use of computers and internet as illustrated in Fig.2. What is also interesting is the fact that in each facility, only a small percentage of individuals expressed that they won’t be comfortable with potential use of e-health initiatives. It can therefore be concluded from this findings that ICT awareness (knowledge on the use of computers & internet) brings about a certain amount of comfort among users of e-health initiatives. Qureshi et al have explained the fact that poor ICT skills among health workers are a cause of reluctance on embracing the use of e-health initiatives [9].

Fig.2: Level of ICT literacy v/s comfort of e-health use among health care workers

Health care workers at both facilities displayed a significantly high attitudinal readiness by appreciating the necessity of e-health implementation and also believing that it could assist them in their work as illustrated in Fig.3. This is a positive finding as attitudinal readiness is quite a critical component when it comes to implementation of any new initiative in a work place.
This is because employees can resist the use of new initiatives unless they believe that it is necessary and not just an unnecessary burden.

Majority of participants in facility A agreed that their institution’s infrastructure was ready for adoption of e-health. The opposite is the truth for Facility B as only less than 50% of the participants agreed that their infrastructure was ready for the adoption of e-health. These findings illustrated in Fig.4 can be justified by the fact that many hospitals in Botswana were built at different points in time and hence the state of their infrastructure cannot be expected to be at the same level.

The results presented on this study are from a survey conducted at only 2 health care facilities and hence cannot be used to provide a complete picture of e-health readiness in Botswana. This was a preliminary study aimed at identifying e-health readiness of health care institutions in Botswana. Based on this study, it can be concluded that decision makers need to pay a close attention to capacity as well as infrastructural development so as to meet the needs for e-health readiness. There is a need for a further comprehensive e-health readiness survey to be undertaken, involving more health facilities. Such surveys can better inform the government on its e-health implementation strategy and hence improve the implementation success rate of e-health initiatives in Botswana. It cannot be denied that organizational readiness has been identified as a critical precursor to the successful adoption of an innovation [10].

Tools used in measuring e-health readiness also have to be continually reviewed in order to improve their reliability and better assist countries in preparing them for the implementation of e-health initiatives.

REFERENCES


