



ELSEVIER

journal homepage: www.ijmijournal.com

Barriers to acceptance of personal digital assistants for HIV/AIDS data collection in Angola

Karen G. Cheng^{a,*}, Francisco Ernesto^b, Ricardo E. Ovalle-Bahamón^a, Khai N. Truong^c

^a Department of Psychiatry and Human Behavior, Charles R. Drew University of Medicine and Science, Los Angeles, USA

^b Angolan Armed Forces, Luanda, Angola

^c Department of Computer Science, University of Toronto, Toronto, Canada

ARTICLE INFO

Article history:

Received 24 December 2010

Received in revised form

29 March 2011

Accepted 22 April 2011

Keywords:

Computers

Handheld

Data collection

HIV

Sexual behavior

Africa South of the Sahara

ABSTRACT

Purpose: Handheld computers have potential to improve HIV/AIDS programs in healthcare settings in low-resource countries, by improving the speed and accuracy of collecting data. However, the acceptability of the technology (i.e., user attitude and reaction) is critical for its successful implementation. Acceptability is particularly critical for HIV/AIDS behavioral data, as it depends on respondents giving accurate information about a highly sensitive topic – sexual behavior.

Methods: To explore the acceptability of handheld computers for HIV/AIDS data collection and to identify potential barriers to acceptance, five focus groups of 8–10 participants each were conducted in Luanda, Angola. Facilitators presented Palm Tungsten E handhelds to the focus groups, probed participants' perceptions of the handheld computer, and asked how they felt about disclosing intimate sexual behavior to an interviewer using a handheld computer. Discussions were conducted in Portuguese, the official language of Angola, and audio-taped. They were then transcribed and translated into English for analysis.

Results: In total, 49 people participated in the focus groups. PDAs were understood through the lens of social and cultural beliefs. Themes that emerged were suspicion of outsiders, concern with longevity, views on progress and development, and concern about social status. **Conclusions:** The findings from this study suggest that personal and cultural beliefs influence participant acceptance of PDAs in Angola. While PDAs provide great advantages in terms of speed and efficiency of data collection, these barriers, if left unaddressed, may lead to biased reporting of HIV/AIDS risk data. An understanding of the barriers and why they are relevant in Angola may help researchers and practitioners to reduce the impact of these barriers on HIV/AIDS data collection.

© 2011 Elsevier Ireland Ltd. All rights reserved.

1. Introduction

Information technology has greatly improved health services, particularly in high-income countries such as the United States and in Western Europe. For example, information about

prevention and treatment of many diseases is widely available on the World Wide Web [1,2]. And, electronic medical records are expected to revolutionize the way that healthcare is delivered [3–5].

However, to date, people in low-resource countries have not received the same benefits from information technology

* Corresponding author at: Department of Informatics, Donald Bren School of Information and Computer Sciences, University of California, Irvine, Donald Bren Hall 5042, Irvine, CA 92697-3440, USA. Tel.: +1 949 824 3704.

E-mail addresses: kgcheng@uci.edu, karencheng@cdrewu.edu (K.G. Cheng).

1386-5056/\$ – see front matter © 2011 Elsevier Ireland Ltd. All rights reserved.

doi:10.1016/j.ijmedinf.2011.04.004

as people in industrialized nations [6–8]. People in this region do not have the same level of access to technology, due in part to the high cost of the equipment, the lack of equipment and applications that are designed for their context, and unreliable sources of electricity (e.g., [8]).

Handheld computers, for example, personal digital assistants (PDAs), may be one solution that can improve the information flow and quality of health services provided in low-resource countries [9]. A number of data collection and informational applications are now available for PDAs. The touchscreen is easy and intuitive to use, with extra functionality provided through the keypad. PDAs operate on long-lasting rechargeable batteries, and in some cases, may be charged using solar panels. Solar chargers performed well in a large household survey in remote areas of rural Tanzania [10]. In addition, PDAs allow health providers to be more mobile, traveling from clinic to clinic or village to village.

However, the success of using PDAs in low-resource countries depends on the acceptability of the technology (i.e., user attitude and reaction toward the technology). There is growing recognition in the literature that user attitudes are critical to the success of informatics solutions [11–13].

Acceptability of a technology for data collection is particularly critical for HIV/AIDS prevention researchers and practitioners, because they rely on respondents to give accurate information about a highly sensitive topic – sexual behavior. Studies confirm that people in low-resource countries are concerned about privacy and confidentiality regarding their sexual behavior [14–16]. Researchers and practitioners who do not adequately demonstrate to respondents that computerized surveys are confidential may not only gather inaccurate data, but also they may become targets of violence [17]. For example, in Mensch et al.'s study, researchers entering rural communities in Kenya to conduct sexual behavior surveys with laptop computers were thought to be government spies. While some research has compared the speed and efficacy of using PDAs for health-related data collection, few studies have addressed the social and cultural factors affecting PDA acceptance [18].

The purpose of this study then was to identify potential barriers to acceptance of PDAs in studies of HIV risk in post-conflict Angola. HIV prevalence in Angola is estimated to be 2.1% [19]. Though the prevalence rate is relatively low compared to neighboring countries, such as Namibia, Zambia, and DR Congo, the end of Angola's 27-year civil war in 2002 has increased population mobility and enabled HIV to spread more quickly through the country. There is a particular urgency for implementing and evaluating HIV prevention programs. Like other sub-Saharan African countries, Angola has much to gain from the successful deployment of PDA-based HIV-related data collection.

To explore the acceptance of PDAs for studies of HIV risk in Angola, we conducted qualitative focus groups with Angolans in the fall of 2005, just a few years after the end of the civil war. Participants were recruited across the range of social and economic strata. We presented PDAs to focus group participants and discussed their concerns with disclosing sexual behaviors to interviewers using a PDA.

2. Method

2.1. Sampling and recruitment

Participants were men and women, between the ages of 18 and 55, who lived or worked in Luanda, Angola. They were recruited via flyers and face-to-face invitations. To gain a broad representation, participants were recruited from three populations of varying socioeconomic levels: patrons of *cyber-café*s in the Maianga neighborhood, where residents are primarily of higher education and higher income; passers-by of a local youth center in the Bairro Pedelé neighborhood, where residents are of moderate education and moderate income; and vendors and clients of the Estalagem marketplace in the outskirts of Luanda, most of whom are of low education and low income.

The study protocol was approved by the Institutional Review Board at Charles Drew University of Medicine and Science.

2.2. Equipment

The handheld computers used in this study were PalmOne Tungsten E devices. The Tungsten E devices are small $4.5 \times 3.1 \times 0.48$ inch units each powered by a 126 MHz ARM processor. Each device has a sharp, high-resolution, 320×320 -pixel screen and 32 MB of internal memory and runs Palm OS 5.2.

2.3. Focus group procedures

The methodology of focus groups was chosen for two reasons: First, the method is acceptable within this cultural context. Previous experience by this research team taught us that many Angolan participants felt uncomfortable and isolated during individual interviews and preferred group interviews. Second, the method is useful for gaining preliminary understanding of an issue when that issue is not highly sensitive [20–22].

In each location, we held two focus groups of 8–12 participants – one for men and one for women. The sex of the facilitator was the same as the participants in that group. Participants were individually told a detailed explanation about the study, and given an opportunity to ask questions. All participants then gave written informed consent, and each participant received an incentive, worth approximately 10 USD, upon completion of the study.

Immediately prior to each focus group, participants were individually administered a brief paper survey by a trained, local interviewer. The goals of this interview were to collect demographic information and evaluate participants' experience with technology, as well as to give many of the participants their first experience with a survey.

When they came together for the group discussion, the facilitators guided the discussion to cover the following topics: how did participants feel about being interviewed during the initial brief interview; what were their reactions when the facilitator presented the Palm Tungsten E handhelds to them; a scenario in which participants were to imagine an interviewer using a handheld computer to record responses about

Download English Version:

<https://daneshyari.com/en/article/6927257>

Download Persian Version:

<https://daneshyari.com/article/6927257>

[Daneshyari.com](https://daneshyari.com)