SOCIAL INTERACTIVITY IN A HEALTHCARE BASED MOBILE PLATFORM FOR ELDERS

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ABSTRACT
Social media could be considered as a key tool promoting interaction among elderly to overcome loneliness and social isolation. However, the elders find it hard to use existing mobile based social media applications as they are not developed considering the specific requirements of elders. Thus, we propose a social interactive health care based mobile application named SerpentPole for elders. SerpentPole is a customized application for elders with low technical affinity.

Keyword: healthcare, elders, mobile platform, social media

INTRODUCTION
The ever increasing proportion of the elderly in Singapore is often socially isolated and subjected to feel lonesomeness subsequent to retirement and is prone to adverse consequences such as depression, poor physical health with a greater risk of early death. Steptoe et al. (2013) identified social isolation as a risk factor for early death in a longitudinal study administered from 2004 to 2012 (English Longitudinal Study of Aging). Dissolution of traditional family, ostracism, and lack of access to transport contribute to alienation. A user-friendly mobile platform, will be an effective and a low cost approach to develop social interactions (with family, friends or fellow patients having similar conditions), to overcome loneliness; reach health information (Ford & Ford, 2009). Moreover, having a mobile platform with multiple capabilities such as reminding less vigilant elders affected with memory loss, of necessary medication, health diets and exercise etc., monitoring their health conditions and providing quick diagnosis will be beneficial.

Seniors are less likely to seek entertainment through online games, videos or virtual worlds or maintain profiles in social networking sites (Jones & Fox, 2009;
Pfeil, Arjan, & Zaphiris, 2009). However, according to Generations Online Reports in 2009 and 2010, social network usage among age 74+ had quadrupled demonstrating fastest growth from 2008 to 2010 (4% to 16%). Moreover, health queries drive senior internet users (age 74+) to the internet outpacing teens by a significant margin (Jones & Fox, 2009). In realizing the prospective of a mobile healthcare application for socializing among elders, one-app-fits-all platforms are developed to be used by users of different age groups (young adult vs. elder), backgrounds (e.g. education) and cultures. Culture specific factors as well as individual characteristics could influence the overall attitude towards mobile phone use for healthcare communication (e.g. privacy and reluctance to discuss medical issues openly). Thus, an in-depth understanding of the factors affecting acceptance of social interactive healthcare based mobile platforms by elderly of different communities is of great importance to achieve the expected benefits and to tailor the system for specific needs of elders.

Prensky (2001), refers elderly media users as digital immigrants. Digital immigrants are users who did not grow up using it but who are using it now. Digital immigrants make decisions based on their real life beliefs and moral considerations (Dogruel, Joeckel, & Bowman, 2013; Vauclair, 2009). For example, violent games where virtual characters were killed are considered to be morally disengaged and such morally disengagement strategies are not readily accepted by the elderly. Moral Foundation Theory (MFT) (Haidt & Joseph, 2007) is useful in understanding the relationship between morality and social media use. MFT focuses on differences in moral reasoning on the basis of inborn and modular foundations (intuitive and cognitive reasoning).

According to Social Interaction Screen (SI-Screen), elderly finds existing user interfaces of social networking services (SNS) as usage barriers with their low technical affinity (Nutsi, Burkhard, & Koch, 2013) and as such, the applications for elders should address different user interface design components. Firstly, there should be less functions in the menu (Holzinger, Searle, & Nischelwitzer, 2007) to avoid the confusion and difficulties in remembering the long list of menu items. Secondly, most of the functions should be represented as icons on a screen with less interaction steps to facilitate easier location of desired functions, cancellation of an operation etc. Furthermore, mobile applications for elders should be equipped with easily understandable function names and easily recognizable icons. Thirdly, in such applications, it is necessary to use readable large font sizes and icons too. The recommended vertical length in fonts for older adults in mobile phones is greater than 3mm (Omori, Watanabe, Takai, Takada, & Miyao, 2002) and recommended icon size is 32 pixels (7.68 mm) to achieve same performance level (accuracy and speed) as in younger adults (Hourcade & Berkel, 2008) and more contrasting colors will be used.
(Holzinger, et al., 2007), to differentiate different icons from one another. Finally, scrolling (reduce volume in a screen) and long press (short and long tap will be same) should be avoided (Kang & Yoon, 2008).

**Research Question:** How does a healthcare based mobile social platform contribute to lessen social isolation of elderly within different communities?

As a solution for the research gap identified, we are developing a social interactive mobile platform named SerpentPole for elderly. Our objective is to evaluate the effectiveness of our SerpentPole application and to assess its capability to foster social interaction and activity among the elderly.

**METHODOLOGY**

A social networking mobile platform named SerpentPole is created for elders based on the recommendations for user interface design for elders (e.g. font size, colour contrast, avoiding long press, etc.). We used a user centered design process to produce a tailored solution for elderly. Elderly were involved through focus groups and interviews. Initially a prototype was implemented as a clickable mockup application to evaluate the graphical layout of the interfaces. Then the next prototype was developed to evaluate the user acceptance of the application.

Several steps will be followed to assess the user acceptance of SNS application. At first, a pilot study will be performed by introducing the application to 30 elders of a patient cohort (e.g. diabetics) in a main hospital in Singapore and to monitor their interaction pattern with doctors, other patients in the cohort and the loved ones using the application for 6 months. For data mining, we will be using anonymised data to maintain the confidentiality of identity of patients and caregivers. The level of ties, frequency of interaction, usage patterns, emotional support and advice given will be analyzed within the community and between communities. Ahead of the study, users will be briefed on the features and functionality of the system and a video tutorial will be made available to be accessed anytime for required assistance. Social networking theories will be used to understand different social ties among elders in the communities. At the end of 6 months of study period, a questionnaire will be given to elders to evaluate the utility of the system as a social platform.

**CONCLUSION**

Through the proposed application SerpentPole, we plan to evaluate how social isolation could be reduced among different communities. In addition, we plan to assess how elderly get involved in activities provided in social media.

**REFERENCES**

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