

Designing Wellness Mobile Apps

Sarita Pais
Whitireia Polytechnic
Sarita.Pais@whitireia.ac.nz

ABSTRACT

This paper presents the guidelines for designing good wellness mobile apps. To design useful apps for users it is required to include utility and usability. Although there is plentiful literature around this, software developers lack domain knowledge and hence wider stakeholders including health professionals need to involve in the design process. This paper attempts to put together a set of guidelines for developers planning to design wellness apps.

Keywords: mobile apps, wellness, useful apps

1. INTRODUCTION

Smart phones have the capacity of a PC and can accommodate mobile apps to encourage healthy eating, exercise and weight management.

Apps follow into different categories. Those designed to educate, monitor and recommend. Educational apps are those designed to educate about the nutrient contents of different foods; monitoring apps are those designed to monitor wellness and to link it to calorie count and goals for the day, as in step counter. Recommendation apps are those that relate to health conditions and suggest a course of action. Mobile apps connected to medical devices such as blood glucose meter, which test for blood glucose levels and make recommendations about insulin dosage are an example of recommendation app.

Mobile phones have been a popular intervention to remind patients through SMS about medication, blood glucose tests, blood pressure checks and for sending encouraging messages to quit smoking. Such measures have seen positive outcomes through research studies (Fjeldsoe, Marshall & Miller, 2009).

Consumers as patients are flooded with new mobile apps and are generally unsure of the appropriate app suitable for their health and wellness outcomes. Although there are no proper guidelines to choose the right app, there is focus to guide consumers on good medical apps (Wicks & Chiauzzi, 2015).

2. DESIGN GUIDELINES

Apps designed by developers are built with little collaboration with medical professionals and lack incentives for long-term use of these apps. Many articles on developing good apps have been published and the lessons learned are listed in this paper.

Utility and Usability

As per Nielson (2012), useful interface can be designed if it covers the utility and usability aspects. Utility determines the basic functionalities required in the app and usability describes the ease and pleasant experience of using the app. Apart from these, there are other features important to designing a sustainable app.

Open Standards

There is a drive for open standards and reusing data in other applications. Apps built on open standards acceptable in clinical coding such as HL7-FHIR, SNOMED CT will have better integration into clinical software for use by health professionals. Apps that are built on cloud-based platforms (Hsueh, Chang & Ramakrishnan, 2016) and store user data on the cloud will be better able to share data with appropriate authentication.

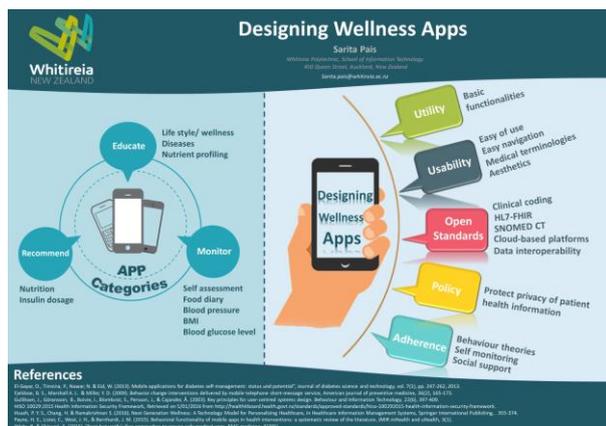
Policy

In New Zealand, HISO 10029:2015 Health Information Security Framework (HISO 10029:2015) protects privacy of patient health information stored and shared in different systems. If data from apps such as the Easy Diet Diary on iPhone needs to be shared with clinical systems connecting to the Nutrition Database FoodWorks®, it needs to comply with the required level of privacy.

The Health Insurance Portability and Accountability Act (HIPAA) (US) has a policy on privacy about an individual's identity and health information. El-Gayar (2013) studied 71 apps and only one app was HIPAA compliant.

Adherence

Behaviour theories are not considered as most of the design development is done by software developers. It would be desirable to involve professionals from other disciplines such as psychology to understand user behaviour which can influence app design.



This poster appeared at the 9th annual conference of Computing and Information Technology Research and Education New Zealand (CITRENZ2018) and the 31st Annual Conference of the National Advisory Committee on Computing Qualifications, Wellington, New Zealand, on July 11-13, 2018 as part of ITx 2018.

Payne et al. (2015) confirmed self-monitoring and social support was prominent in most apps. Users learn to self-monitor and share their experience and thus learn from each other about their health. The app should have adequate level of notification and reminders and the design should be carefully planned with insights from potential users, health professionals and other stakeholders.

3. CONCLUSION

This paper presents the guidelines in designing good wellness apps. Most of the time IT professionals have required technical skills for designing an app with requirements that *they* feel are essential. In reality a useful app designed for users should involve wider stakeholders and other considerations.

4. REFERENCES

El-Gayar, O., Timsina, P., Nawar, N. & Eid, W. (2013). Mobile applications for diabetes self-management: status and potential", *Journal of diabetes science and technology*, vol. 7(1), pp. 247-262, 2013.

Fjeldsoe, B. S., Marshall A. L. & Miller, Y. D. (2009). Behavior change interventions delivered by mobile telephone short-message service, *American journal of preventive medicine*, 36(2), 165-173.

Gulliksen, J., Göransson, B., Boivie, I., Blomkvist, S., Persson, J., & Cajander, Å. (2003). Key principles for user-centred systems design. *Behaviour and Information Technology*, 22(6), 397-409.

HISO 10029:2015 Health Information Security Framework, Retrieved on 5/01/2016 from <http://healthitboard.health.govt.nz/standards/approved-standards/hiso-100292015-health-information-security-framework>.

Hsueh, P. Y. S., Chang, H. & Ramakrishnan S. (2016). Next Generation Wellness: A Technology Model for Personalizing Healthcare, In *Healthcare Information Management Systems*, Springer International Publishing, . 355-374.

Payne, H. E., Lister, C., West, J. H., & Bernhardt, J. M. (2015). Behavioral functionality of mobile apps in health interventions: a systematic review of the literature. *JMIR mHealth and uHealth*, 3(1).

Wicks, P. & Chiauzzi, E. (2015). 'Trust but verify'—five approaches to ensure safe medical apps, *BMC medicine*, 3(205).