



The m-Health revolution: Exploring perceived benefits of WhatsApp use in clinical practice[☆]



Kurubaran Ganasegeran^{a,b,c,*}, Pukunan Renganathan^d, Abdul Rashid^e, Sami Abdo Radman Al-Dubai^f

^a Ministry of Health Malaysia, Parcel E, Putrajaya, Malaysia

^b Clinical Research Center, Seberang Jaya Hospital, 13700 Seberang Jaya, Penang, Malaysia

^c Medical Department, Tengku Ampuan Rahimah Hospital, 41200 Klang, Selangor, Malaysia

^d Clinical Research Center, Tengku Ampuan Rahimah Hospital, 41200 Klang, Selangor, Malaysia

^e Department of Public Health, Penang Medical College, 10450 Georgetown, Penang, Malaysia

^f Faculty of Medicine, SEGI University, 47810 Petaling Jaya, Selangor, Malaysia

ARTICLE INFO

Article history:

Received 27 April 2016

Received in revised form 8 September 2016

Accepted 14 October 2016

Keywords:

Mobile health

WhatsApp

Perceived benefits

Clinical communications

ABSTRACT

Background: The dawn of m-Health facilitates new horizons of professional communication through WhatsApp, allowing health professionals to interact fast and efficiently for effective patient management. This preliminary study aimed to investigate perceived benefits, if any, of WhatsApp use across general medical and emergency teams during clinical practice in Malaysia.

Methods: A cross-sectional study was conducted in a universal sample of 307 health professionals comprising of nurses, medical assistants, medical residents, medical officers and physicians across medical and casualty departments in a Malaysian public hospital. The self-administered questionnaire consisted of items on socio-demographics, WhatsApp usage characteristics and the type of communication events during clinical practice.

Results: The majority of respondents (68.4%) perceived WhatsApp as beneficial during clinical practice. In multivariate analysis, perceived benefits was significantly higher amongst the clinical management group (aOR = 2.6, 95% CI 1.5–4.6, $p = 0.001$), those using WhatsApp for >12 months (aOR = 1.7, 95% CI 1.0–3.0, $p = 0.047$), those receiving response ≤ 15 min to a new communication (aOR = 1.9, 95% CI 1.1–3.2, $p = 0.017$), and frequent information giving events (aOR = 2.4, 95% CI 1.2–4.8, $p = 0.016$).

Conclusion: Perceived benefits of WhatsApp use in clinical practice was significantly associated with usage characteristics and type of communication events. This study lays the foundation for quality improvement innovations in patient management delivered through m-Health technology.

© 2016 Elsevier Ireland Ltd. All rights reserved.

1. Introduction

Incomplete, fragmented and disorganized clinical communications contribute to the bulk of medical errors during patient management [1]. Traditional methods of communications that rely on face-to-face meetings, telephone conversations and alphanumeric paging systems have reported adverse events in patient care [1]. Better reliable, accurate and efficient communication methods

are required for acute situations such as to summon a clinician at patient's bedside or reporting critical test results [2].

Clinical communications have been revolutionized with the proliferation of innovative and versatile sophisticated communication gadgets, like smart-phones, allowing speedy internet connectivity for instant access to vast amounts of medical information, including imaging results, laboratory tests, clinical practice guidelines and drug reference guides [1,3].

The World Health Organization (WHO) Global Observatory for e-Health (GOe) defined m-Health or mobile health as medical and public health practice supported by mobile devices, such as mobile phones, patient monitoring devices, personal digital assistants (PDAs), and other wireless devices [4]. The dawn of m-Health facilitates new horizon of clinical communication through communication tools like Line, WeChat, Tango, Viber or WhatsApp,

[☆] This research project was presented and awarded the Best Poster Presentation Award at the Selangor State Research Day Conference, Ministry of Health Malaysia.

* Corresponding author at: Ministry of Health Malaysia, Parcel E, Putrajaya, Malaysia.

E-mail address: medkuru@yahoo.com (K. Ganasegeran).

allowing healthcare professionals to interact fast and efficiently for effective patient management. WhatsApp (WhatsApp Inc., Mountain View CA), an app compatible in smartphones allow users to text messages and media content via videos, voice messages or photographs to their contacts. It facilitates creation of group chats, allowing multiple users to participate, monitor and reply to conversations. WhatsApp utilizes cellular data plans and wireless Internet networks with an annual subscription fee of \$0.99.

There are approximately five billion mobile phone subscriptions globally, with over 85% being covered by commercial wireless signal [5]. In Malaysia the usage of smart phones is estimated to be 63%. WhatsApp, a cross-platform app being compatible in all smartphone platforms like Android, iPhone and Windows mobile has approximately 500 million users worldwide [6]. Malaysians are the third leading global mobile internet population using WhatsApp as a communication tool [7]. Studies report the ownership of smart-phones amongst healthcare professionals for clinical communication range between 60 and 80% [3,8].

Clinical communications amongst multidisciplinary teams are often obtunded around decision making, autonomy and role enactment as a result from hierarchical structure of the medical system, impeding collegial communication and compromising patient care [9]. A recent report concluded that general and orthopedic surgeons perceive WhatsApp as an intra-departmental tool for quality improvement innovations of patient care, overcoming gaps of professional autonomy, establishing excellent clinical communication and handovers between surgical teams [6,8]. After an extensive literature search, to date, there has not been a published study which evaluated the use of WhatsApp in medical teams. This preliminary investigation aimed to explore perceived benefits of WhatsApp use amongst general and emergency medical teams.

2. Methods

2.1. Study setting and population

This cross-sectional study was conducted among 324 health professionals across general medical and emergency departments at the Tengku Ampuan Rahimah Hospital (HTAR) Klang, which is Malaysia's second busiest public health facility in terms of patient admissions [10].

All health professionals (nurses, medical assistants, medical residents, medical officers, and physicians) from medical and emergency departments were approached using universal sampling technique during Departmental Continuous Medical Education (CME) sessions. Objectives and benefits of the study were explained verbally and in a written form attached to the questionnaires. Respondents were assured that information obtained would be confidential and their participation would be anonymous. A written consent was obtained from those who agreed to participate.

2.2. Ethics statement

This study complied with the guidelines convened in the Declaration of Helsinki. This research protocol was approved by the Medical Research Ethics Committee (MREC), Ministry of Health Malaysia (government approval number: NMRR-15-893-26047).

2.3. Study instrument

All respondents completed a self-administered questionnaire that included items on socio-demographics, perceived benefit of WhatsApp, usage characteristics of WhatsApp and type of communication events. The questionnaire was administered in English. The perceived benefit was defined as the perception of positive consequences by the adoption of WhatsApp. This definition was

modified from the concept of behavioural medicine in clinical practice [11]. The perceived benefit was assessed with a single dichotomous question, "Do you perceive WhatsApp as beneficial in your clinical practice?" with response option "Yes" or "No". Demographics included age, gender and employment status. Employment status was categorized into two; first contact group (nurses) and clinical management group (medical assistants, medical residents, medical officers and physicians) according to the pre-defined profession grades and clinical roles as legislated by the Public Service Department (PSD) of Malaysia [12]. Seven items assessed WhatsApp usage characteristics. Three items that assessed duration of WhatsApp use, response time to a new communication event and time spent on WhatsApp per day were dichotomized according to the median of ratio level measurement. Subsequent four items that evaluated the use of WhatsApp in wards, clinics, procedure rooms and during on-calls were measured with a four point Likert scale ranging from 1 [least frequently] to 4 [most frequently]. Items were dichotomized into two categories, "frequently" and "less frequently" to ease interpretation. The final part assessed the type of communication events (5 items) of WhatsApp use in clinical practice. Items include the validated domains of a recent reported approach: clinical questions, information giving event, instruction giving comments, administrative questions and responses and discussion with colleagues [8]. These domains were measured on a four point Likert scale ranging from 1 [least frequently] to 4 [most frequently]. Items were dichotomized into two categories, "frequently" and "less frequently" to ease interpretation.

2.4. Data analysis

Data collected were analysed using Statistical Package for Social Science (SPSS) program version 18.0 (SPSS Inc., Chicago IL, USA). Normality tests were done, and all quantitative data were found to be normally distributed. Descriptive statistics were conducted for all covariates. Chi-square test was used to assess the association between perceived benefit and categorical variables in this study.

Multiple logistic regression analysis using Backward Wald technique was performed to obtain predictors associated with perceived benefits of WhatsApp use in clinical practice. All covariates that had significant associations in the bivariate analysis were included in the multivariate analysis. Multi-collinearity between independent variables was checked for values of standard errors (SE).

3. Results

3.1. Sample characteristics

Three hundred twenty four healthcare professionals were invited to participate and 307 (94.8%) participated. The sample consisted of 60 (19.5%) males and 247 (80.5%) females. The mean (\pm SD) age of respondents was 27.9 (\pm 5.8) years.

3.2. WhatsApp usage characteristics

Two hundred ten (68.4%) respondents perceived WhatsApp as beneficial in clinical practice. The majority of WhatsApp users were health professionals from the first contact group, 179 (58.3%). The mean (\pm SD) duration of WhatsApp use, time spent on WhatsApp per day and the response time to a new communication was 19.4 (\pm 16.5) months, 5.6 (\pm 5.0) hours and 18.5 (\pm 27.4) minutes respectively.

Download English Version:

<https://daneshyari.com/en/article/4966736>

Download Persian Version:

<https://daneshyari.com/article/4966736>

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