

Research Article

**Attitude of patients and their attendants towards digital communication technologies to communicate with healthcare providers**

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**ABSTRACT**

*Interaction between patients and healthcare providers is very important for the quality of care. Social networking sites, apps and other forms of digital communication such as WhatsApp, Facebook, blogs and emails have opened new ways of communications between patients and healthcare providers. The aim of this study is to assess the attitude of patients and their attendants using digital communication technologies to interact with healthcare providers for a number of reasons such as health education and details of test result. A total of 621 patients and their attendants participated in this study. The data were analyzed using Chi-square statistical test. Among respondents, 90.8% (n=564) used Facebook, 92.6% (n=575) used text messages (SMS & WhatsApp), 82.1% (n=510) used email, 63.1% (n=392) used Skype/ video call, and 24.3% (n=151) respondents favored twitter messages. 81.3% n=505 respondents want to join Facebook page to communicate with other patients (p=0.000) whereas 67.1% n=417 of them want to sign-up to receive twitter message from health care provider (p=0.000). Majority of the patients and their attendants are moving toward a social media and digital communication technology, and prefer communication with healthcare provider and their peers regarding treatment, diagnosis and health education. Once they get through with the traditional method of face to face consultation with healthcare provider.*

**Keywords:** Attitude, digital technology, healthcare provider, patient communication, social media.

**1. INTRODUCTION**

In this era of modern technology everyone is engaging with digital communication technology tools such as cellphones, smart phones, computers and tablets (Mekaru & Brownstein, 2014). These tools help individuals in collaborating and communicating with each other easily. Moreover, there are various social networking communication tools available such as Facebook, WhatsApp, Skype, Twitter and Blogs which help individuals to communicate with their peers (Ventola, 2014). These social media technologies offered great opportunity in improving communication and engagement among individuals (Peck, 2014).

. In any healthcare profession communication and interaction is very essential (Jenssen, Mitra, Shah, Wan, & Grande, 2016). Communication between patients and/or their attendants and healthcare providers is important to enhance the quality of health care. A good communication between healthcare stakeholders provides satisfaction to them in terms of diagnoses and treatment (Lee et al., 2016).

The old and conventional method of communication with healthcare provider was face to face. but now a days health care provider are giving opportunities to patients and their attendants to connect with them through many new innovative digital communication technologies such as voice and video calls, email, texts and social media (Facebook and Twitter) (Jenssen et al., 2016). Patients deliberately have started using digital communication technology as it is inevitable and ubiquitous in the health care sector and it has the potential to improve patients health experience (Lee et al., 2016).

Access to digital communication technology and email amenities can lead to improve patient's health status and its outcome (Huxley, Atherton, Watkins, & Griffiths, 2015). According to PEW Research Center in the United States (US),

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90% of the adult use the Internet, 72% people visit social media and 12% browse health related issues (Lee et al., 2016). Also, World Health Organization (WHO), have developed blogs on different social media websites e.g. Facebook, for health related information for patients and their attendants to seek healthcare information relating to diseases and their treatment.

Therefore, it is necessary to know the attitude of patients and their attendants towards using digital communication technology for interacting with health care providers in Pakistan.

## 2. METHODOLOGY

A cross sectional study was conducted involving patients and providers of age 16 years and above from different hospitals of Karachi, Pakistan. The self-administered questionnaire was adopted from a similar study conducted in the US (Jenssen et al., 2016). The recruitment of participants was done through convenient sampling method. The sample size was determined using single population proportion method to estimate the minimum number of participant required for the study.

$$n = Z^2 (\alpha/2) p (1 - p)/d^2$$

Based on this calculation, we circulated the questionnaires to around 750 participants. We selected participants who used digital communication technology to communicate and interact with healthcare providers.

The questionnaires was filled by patients and their attendants in hospital settings. Questionnaires were also circulated through emails, Facebook page and WhatsApp to personal contacts working in different hospitals. Participant were assured of anonymity and confidentiality of data.

The questionnaire survey design included socio-demographic characteristics, level of agreement with several different uses of communication technology, attitude toward usage of digital technology and health information, assessed participant attitudes to participate peer coaching program by joining Facebook and Twitter for receiving message and reminders from healthcare provider. Attitude was assessed using five-point Likert scale ranging from "strongly disagree to strongly agree". Duration of research study was 4 months. The data was analyzed on the SPSS using Chi-square Test.

## 3. RESULTS

Total number of respondents were 621.

The number of male and female respondents were approximately same (49.8% male (n=309) and 50.2% female (n=312)). Table 1 shows the participant characteristics.

**Table 1:** Participant Characteristics

	Overall (%) (n=621)
<b>Male</b>	49.8
<b>Female</b>	50.2
<b>Age (years)</b>	
<b>16-25</b>	34.8
<b>26-35</b>	47.5
<b>36-45</b>	9.5
<b>46-55</b>	5.5
<b>56 +</b>	2.7
<b>Place of Residence</b>	
<b>Rural</b>	34.3
<b>Urban</b>	65.7
<b>Qualification</b>	
<b>Under Matriculation</b>	7.4
<b>Matric / O-level</b>	19
<b>Intermediate / A-level</b>	46.7
<b>Bachelors or Higher Degree.</b>	26.9
<b>Salary</b>	
<b>&lt;49,999</b>	66.5
<b>50,000-99,999</b>	26.7
<b>100,000 and above</b>	6.8
<b>Health Status</b>	
<b>Excellent / Good</b>	87.2
<b>Fair / Poor</b>	12.7

Most of the respondents were of the age 26-35 years lived in urban areas, Intermediate / A-level qualified with salaries of Rupees 50,000 to 99,999. And with excellent / good health status.

Among all respondents we asked them what type of phone they use either they use traditional phone (telephone) or they use smart phone with features like social media. Out of n=621, 11.3% (n=70) used telephone, 34.3% (n=213) used smart phone and 54.4% (n=338) used both telephone as well as smart phone.

Next, we asked respondents about what medium and channel they used to communicate with their healthcare provider for which majority of them used phone call, text (SMS / WhatsApp) and Video call / Skype. Also, there were many respondents who used email and Facebook to contact with their healthcare providers.

Among n=621 we asked them who respond their query they said 37.7% (n=234) Doctor / Physicians respond, 44.6% (n=277) said Nurses and 17.7% (n=110) said healthcare coordinator.

We also asked respondents their willingness to join Facebook to communicate and meet with other peers and 81.3% (n=505) of them showed their inclination. Also, we asked them if they want to sign up to join twitter to receive messages from health care providers and around 67% (n=417) agreed to it.

Chi-square test were used to find association between demographic characteristics and respondent's interest to 'join Facebook to engage with other peers' and 'sign-up Twitter to receive messages from healthcare provider'. Hence, we used demographics variables such as age, gender, income and qualifications and found all associations significant except gender with joining Facebook as shown in Table 2.

**Table 2:** Chi-square tests between demographics and joining social media Demographics

	Join Facebook	Sign-up for Twitter
<b>Age</b>	X <sup>2</sup> =89.3, p-value=0.000	X <sup>2</sup> =79.3, p-value=0.000
<b>Gender</b>	X <sup>2</sup> =7.6, p-value=0.107	X <sup>2</sup> =11.6, p-value=0.020
<b>Income</b>	X <sup>2</sup> =18.8, p-value=0.016	X <sup>2</sup> =41.9, p-value=0.000
<b>Qualifications</b>	X <sup>2</sup> =39.4, p-value=0.000	X <sup>2</sup> =52.3, p-value=0.000

#### 4. DISCUSSION

In this study, the relationship between demographics and attitudes of patients and their attendants using digital technology to communicate with healthcare provider through social media were determined.

Majority of patients now a days engage with healthcare provider through phone calls, WhatsApp, Facebook and Twitter (Vodopivec-Jamsek, de Jongh, Gurol-Urganci, Atun, & Car, 2012). Other studies showed that patients also showed willingness to use email for communication with healthcare provider (Jenssen et al., 2016). Patients and their attendants are ready to use digital communication channels to interact with healthcare provider to discuss their health status, health education, and report details (Lee et al., 2016).

It was found that 65% of emails in the US were accessed through cellphone device (Lee et al., 2016). Digital communication technologies have paved way for cost effective electronic services in healthcare known as e-health (electronic health) and m-health (mobile health) (Lewis, Synowiec, Lagomarsino, & Schweitzer, 2012). The mobile health application helps patients and their attendants to communicate with healthcare provider. It also enhance the knowledge of patients and their attendants related to disease process and treatment regimen and, hence, improve patient outcomes (Brinkel, Dako-Gyeke, Krämer, May, & Fobil, 2017) (Smith, 2014).

Patients like to talk with people, who are suffering with the same disease, to know and understand their way of coping with the disease. This connection gives patients the courage, hope and motivation to fight with the disease and encourage them to work hard for their own betterment. According to the Impact Advisors, LLC 2014, 1/3th American

adult used social media for health discussion and health concern (Zickuhr & Smith, 2012).

. Another study stated that the reminder messages help patients and their attendants to receive health treatment reminder, updates about the treatment procedures, and alerts on disease prevalence (Dash et al., 2016).

#### 5. CONCLUSION

Digital communication technology has made an easy and simple medium of communication channel for patients and their attendants to interact with healthcare provider. Majority of the patients and their attendants are trending towards social media and digital technology channel such as Text messaging / WhatsApp, Phone Call, Twitter, Facebook and Video Call. Most of the patients and attendants preferred to communicate using digital communication technology with their healthcare provider regarding their ongoing treatment and diagnosis after they had met face to face with the provider in their first appointment.

#### 6. LIMITATIONS

There are a couple of limitations to this study. One of them was the time constraint due to which we were unable to cover all regions of Pakistan. Moreover, this study also did not include risks of using digital communication technology in healthcare.

#### 7. RECOMMENDATIONS

In order to encourage the usage of digital communication technologies in healthcare, hospital should provide proper infrastructure and for security, privacy of patients data, profile and records.

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