

A Study on the Factors Influencing the use of Mobile Health Care Apps

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Abstract

Mobile health care applications are internet based applications that helps in medical and health activities. Health care app helps in recording electronic health records, provide medical reference, remote monitoring and educating people. It is widely used for managing health conditions such as diabetics, asthma, depression and migraine. The aim of the study is to identify the factors that influence the use of health apps. The primary data is collected from people who use mobile health care app. Data is analysed using percentage, mean, standard deviation, Mann Whitney U test and Kruskal Wallis H test. The study reveals that perceived usefulness, perceived ease of use, social influence and trust influence the consumers decision to use mobile app.

Keywords: Health Care, Perceived use, Mobile Applications, Trust

Introduction

The health care industry has started using mobile technology to increase its spread to a wide population. Mobile health is defined as medical and health practices with the help of mobile devices., personal digital assistants, wireless networks and sensors. There are more than 7 billion wireless subscribers in the world and about 51.2% have access to the internet(1). India has the second largest mobile phone users next to China with 1,165 million subscribers as in 2019. According to Ministry of Information and Broadcasting there are 600 million smart phone users in 2022. The broadband India Forum believes that app economy could be worth 12% of India's GDP by 2030.

In 2019 there were 45,478 mobile health app available in Google Play store (Statista, 2020). Health care app remind the users about medication, drug usage, arrange visits with doctors, inform health care program (Ormel,2012). It also help in managing weight, providing vital informations to pregnant women and immunization. Health app enhance the health care quality, services and decrease costs (Obermayer, 2004).

Popular healthcare apps in India are TATA 1mg, Ayushman App, Apollo 247, PharmEasy, Flipkart Health+, Truemeds ClinSav, Amrita Health Information System, Treatpatient, Pappyjoe, virtual practice health care, HealPro+. State Digital Health Mission, Kerala built the MeHealth app as a Free app. The changing lifestyle, diet, obesity levels are leading to lifestyle related chronic diseases. These problems can be solved with the help of digital technologies. Tech savvy consumers with hectic schedules need convenient and easy methods to access health care.

Factors Influencing the Use of Mobile Health Care App

Perceived Usefulness – It means the person who use a product find it useful. Only if the product is worthy one will buy it again and again. Perceived usefulness positively influence the buying behavior of a consumer. When consumers find that health care applications are useful in managing their health they suggest it to their friends and others.

Perceived Ease of Use- It is the belief that a system is easy to use without much difficulty. The customers feel that health application can be used without physical or mental effort.

Trust can be defined as the attitude characterized by belief in counterparty's reliability. This perception of reliability evolves from experience and series of satisfactory interactions. Mayer & Davis (1995) viewed that trust does not assume any risk rather it is willingness to assume risk.

Social Influence is accepting informations from others and believing it as reality. Consumers have a tendency to rely on the experience of friends, relatives, peers and neighbours.

Literature Review

Alok Kulkarni & Sampada (2014) conducted a study on health care applications of the internet of things. The aim of the paper is to understand the application of IoT in healthcare. The study found that intelligent systems help clinicians with easy access to health information, reduced cost and operational efficiency. This technology can monitor aging family member, collect physiological informations about patients.

Park et.al(2018) analyzed the use of mobile app in South Korea. The study reveals that social characteristics such as self efficacy, expected outcome, innovation and quality lead a consumers intension to continue a health app.

Beldad and Hegner (2018) used trust, social influence and health along with technology assisted model. It identified that perceived usefulness and perceived ease of use determines a consumers int4nsion to use fitness app.

Gowin et.al(2015) found that healthcare app is used for making exercise routine, following good eating habits, timely check up etc. Majority of the users preferred app which is free and easy to use.

Dennison et.al(2013) opined that youngsters used fitness app to track health behavior. Personalized features, user friendly and attractive user interface are preferred by the users.

Lupton (2017) from the study found mobile apps and social media were used by users to seek information, track pregnancy and child's development. Knowledge about nutrition, weight gain and excercises can be known through the app.

Statement of the Problem

Mobile health app helps in taking appointments with doctors, follow up visits, inform medication (Abelson 2017). It prevent chronic diseases like obesity, diabetes and heart attack(Pires, 2020). Preventive healthcare reduces the severity of illness and early detection. It include methods to prevent a disease. App lead in counting calories, exercise, controlling food, weight training(Silva 2015). Through mobile health care app an individual can have knowledge about health and can involve in physical activity to improve health. The number of users of mobile applications are increasing day by day and hence it is vital to know to what factors influence them to use health app.

Objectives of the Study

To identify the factors that influence the use of health care app.

To identify if there exist a difference in the factors that influence the use of health care app between male and female.

Methods

Measurement Instrument

Survey method was used in the study to validate the proposed research. The measurement instrument was prepared by using standardized scales. The variables in the construct were measured on a 5-point Likert Scale which range from 1= Strongly Disagree to 5 = Strongly Agree. In addition the study included the demographic characteristics of consumers like gender, age, income, amount spent for mobile app.

Table 1: Instrument Source

Construct	Source
Perceived usefulness	Davis et al., (1989); Davis (1993); Venkatesh & Davis, (1996); Hoque (2016)
Perceived ease of use	Davis et al., (1989); Davis (1993); Venkatesh & Davis, (1996); Hoque (2016)
Social influence	Taylor & Todd, (1995); Bhattacharjee, (2000); Venkatesh et al., (2012)
Perceived behavioural control	Taylor & Todd, (1995); Chau & Hu (2002) Trust Gefen et al., (2003);

Data Collection

An online survey was conducted to collect data. Hence Convenience sampling method was adopted. Total 197 data was collected and after cleaning 162 data was complete and valid.

Data Analysis

The study used mean, standard deviation. As the data is not normal Mann Whitney U test and Kruskal Wallis H test were also used to analyze the data.

Results and Discussion

Table 2: Demographic Profile

Response	Frequency	Percentage
Gender		
Male	75	46.3%
Female	87	53.7%
Age		
18-30	135	83.3%
30-42	15	9.3%
42-54	12	7.4%
Amount Spend for App		
Less than 5000	48	29.6%
5000-10000	27	16.7%
Above 10000	3	1.9%
Free of cost	84	51.9%
Income		
10000-50000	108	66.7
50000-100000	39	24.1
1-1.50 lakh	9	5.6
Above 1.50 lakh	6	3.7

Source: Primary Data

Majority of the respondents are female and 83.3 % belong to 18-30 age group. More than 50% used free app.

Reliability

Reliability is the measure of internal consistency of the constructs in the study. A construct is reliable if alpha value is greater than 0.70 (Hair et. al. 2013). Construct was assessed using Cronbach's Alpha.

Table 3: Reliability Statistics

Construct	No. of items	Alpha
Perceived Usefulness	4	.805
Perceived Ease of Use	4	.700
Social Influence	4	.745
Trust	4	.812
Perceived Behaviour	4	.680

Table 4: Perceived Usefulness

Variables	Mean	Std. Dev
Fitness apps are useful in managing my health	3.78	.678
I find Fitness apps useful in my daily life	3.56	.919
Using Fitness apps will enhance my health	3.81	.798
Fitness apps help me to get information regarding my health quickly	3.85	.758

Source: Primary Data

Table 5: Perceived Ease of Use

Variables	Mean	Std. Dev
Fitness apps are easy to use	3.78	.714
Learning to operate Fitness apps is easy for me	3.85	.805
Using Fitness apps is not complicated; it is easy to understand what is going on	3.80	.913
I can interact with the Fitness apps in a clear and understandable manner	3.69	.902

Source: Primary Data

Table 6: Social Influence

Variables	Mean	Std. Dev
People who are important to me (e.g.physician, family, friends) think that I should use Fitness apps to manage my health	3.41	.975
People who influence my behaviour think that I should use Fitness apps for my health management	3.61	.828
People whose opinion that I value prefer that I use Fitness apps for managing my health	3.52	.836
I would use Fitness apps, if a specialist recommends them to me.	3.81	.750

Source: Primary Data

Table 7: Trust

Variables	Mean	Std. Dev
I trust Fitness apps as they provide good service	3.78	.878
I trust Fitness app promise and commitments to satisfy my health needs	3.70	.811
I trust Fitness app developers to meet my expectations	3.69	.768
I trust Fitness app to provide reliable health services and functions	3.67	.796

Source: Primary Data

Table 8: Perceived Behavioural Control

Variables	Mean	Std. Dev
I have the resource, knowledge, and ability to use Fitness apps	3.56	.834
Using the Fitness apps is entirely within my control	3.59	.896
I think I will be able to use Fitness apps well	3.72	.872
I can get easy reliable help from medical professionals when I have difficulties in using Fitness apps	3.63	.730

Source: Primary Data

Ho: There is no significant difference in the factors that influence the use of app between male and female.

H1: There is significant difference in the factors that influence the use of app between male and female.

Table 9: Mann Whitney U test

Construct	Gender	N	Mean Rank	Mann Whitney U	Z Value	Sig
Perceived Usefulness	Male	75	88.16	2763	-1.701	.089
	Female	87	75.76			
Perceived Ease of Use	Male	75	78.32	3024	-.810	.418
	Female	87	84.24			
Social Influence	Male	75	88.22	2758	-1.708	.088
	Female	87	75.71			
Trust	Male	75	78.50	3037	-.765	.444
	Female	87	84.09			

Source: Primary Data

Significant @ 5% level

The table shows the result of the study examining the significant differences of various constructs among male and female. As all the p values are more than .05 none of the construct exhibit statistically significant difference between male and female.

Ho: There is no significant difference in the factors that influence the use of app among various age groups.

H1: There is no significant difference in the factors that influence the use of app among various age groups.

Table 10: Kruskal Wallis H test

Construct	Age	N	Mean Rank	Kruskal Wallis H	df	P value
Perceived Usefulness	18-30	135	80.27	1.567	2	.457
	30-42	15	95.60			
	42 -54	12	77.75			
Perceived Ease of Use	18-30	135	80.93	6.564	2	.038
	30-42	15	104.60			
	42 -54	12	59			
Social Influence	18-30	135	78.80	5.451	2	.066
	30-42	15	81.80			
	42 -54	12	111.5			
Trust	18-30	135	83.53	7.515	2	.023
	30-42	15	90.80			
	42 -54	12	47			

Source: Primary Data

Significant@5% level

Principle Findings and Implications

From the literature review five factors were identified which influence the use of health app. In perceived usefulness the statement fitness app helps to get information quickly scored highest mean score and they believe that it improves health. Respondents find it easy to operate fitness app and is easily understandable. Respondents like to use health app when specialist recommends it. They trust the app as it provides good service. There is no significant difference between the various factors that influence to use a health app among the male and female. The construct perceived usefulness and social influence do not exhibit significant differences among age groups. Whereas perceived ease of use and trust demonstrates difference among various age groups.

Limitations and Future Research

Although the study identified various factors which influence the use of health app there is still potential for improvement. The literature review on health care app usage revealed that perceived usefulness, ease of use, social factors, perceived behavior and trust could influence its usage, its effect on behavioural intention would be worth examining. Further studies may examine other factors that influence customers app usage.

The study cannot be generalized as it is restricted to Indian consumers. There are differences between health applications in different countries. The study was conducted within few days and consumer behavior and applications are both dynamic, the result may change over time. Longitudinal study with different methodology will help in solving this issue.

Conclusion

The study explored the factors influencing consumers to use health app. Perceived usefulness, ease of use, social factors, perceived behavior and trust could influence the health application usage. The influence of variables were validated by using survey method. The study can be used by app designers in making decisions. It can also be used by health care service providers.

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