

Health communication: A study on health policy and knowledge translation on new media platforms

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ABSTRACT--*Health communication is a research or the application of transmitting health related knowledge such as education in health, campaigns on health and doctor patient communication. New media or social media have marked its presence in the health care sector since the beginning of this decade. Physicians and other healthcare professionals make use of online media platforms for the promotion of health communication activities. The medical applications are easily manageable and there is a possibility of anytime consultation. This research describes how social media channels are being used to encourage health communication practices among users. The most studied new media gadgets are mobile phones and smart watches. The core purpose of the study was therefore to examine the scope and effect of mobile healthcare applications on the daily lives of its users in Kerala and the research study has also identified the actual need of health-related mobile apps among Keralite. The credibility and accessibility of mobile apps related to the health care among the users were also studied to identify the recent trends in communication strategy. A quantitative research method has been used to find out the objectives of the study. A structured questionnaire with eighteen questions was distributed among 200 samples through various social media platforms. Samples were selected using purposive sampling technique. The responses received from the survey helped to identify the users of such applications with a collective set of details of users from two major cities of Kerala, Trivandrum and Kochi.*

Keywords--*Health Communication, youth, new media health policy*

I. INTRODUCTION

For over a decade, social media has become a dominant tool handled by people to disseminate knowledge and information to one another. It is a technology conciliated platform that aid individual users to create and distribute content to virtual communities of practice. There is a direct connection between healthcare and mass communication now a day. Literacy and educational skills are not at all a barrier in new media health communication. People can access personal communication tool from the digital devices and it will provide a variety of healthcare services. The usage of information technology for health communication has been increased excessively. Thus, new media health applications have an impact on users and have paved the way for an online professionalism. Near to 90 percent of older adults use social media to provide and disseminate information and awareness related to health. Social media platforms are a dominant strategy to attain information on immunization, treatment and therapy to the public at any time. The evolution of smartphones along with different features has

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fabricated a user friendly atmosphere. According to surveys, more than ten million people use smartphones for acquiring information and facilities related to health. The health care applications pressurize people to consciously think about their health and also encourage people to lead a healthy lifestyle. People depend on mobile applications for their fitness, beauty and pharmaceutical needs. Thus, the purpose may vary differently from one person to another. There are a number of health apps available to store information about one's medical history and by enabling notifications, these apps will remind people to have medicines on time. Some of the health care apps used for the study are Healthify Me, Maya-Period Tracker, Pedometer, Google Fit, 1mg Online Medical Store, Mfine, Medilife and QK Doc. All these apps are used by the people for their day today fitness; beauty care and pharmaceutical needs. The quality and security of health data provided by new media health communication encourage people to utilize them often. Majority of them are user friendly and cost effective and thus push users to use health apps which would help them to stay away from hospitals. One of the major components is the amount of privacy provided and maintained. These applications provide instantaneous solutions to the needs of the users by adopting an engaging style of communication strategy. It is much more convenient and user friendly in its way of approach. It also affects the relationship between patients and health care professionals.

II. LITERATURE REVIEW

In a study it was identified that lack of development of mobile applications appropriate for the pharmaceutical sector. Qualitative method was used to derive the conclusion that mobile applications on pharmacy are advantageous for pharmacists for their daily practices. **Aungst (2013)**

A study identified the role played by social media in helping public health researchers, which has been increased in the decade. By using quantitative method, they concluded that social media will make public health research and public relations much easier. **Bjerglund, Andersen & Soderqvist, (2012)**

A research study intended to find out the significance of media networks in accomplishing economic growth and public health results and examine how social media are reconstructing Africa's health coordination. The research proves the availability of different mobile devices among the young population group in Africa. They also discuss the consequences of health communication theory, practice, strategy, study and training. **Fayoyin (2016)**

A research study tried to work out the functioning and services of social media in health care and medical field by observing the conditions that influencing the use of social media. Through quantitative method they came into the conclusion that a comprehensive body of facts exists surrounding the use of social media in all areas of science and healthcare. **Francisco J. Grajales (2012)**

A study checked the effective usage of public health and healthcare social media outlets. Purpose is to examine the pros and cons of such social media tools systematically using qualitative methods. Comprehensive indication of social media's potency was nominal. Explicit interpretations cannot be made even though a range of positive and negative systematic study of social media on public health of social media on public health is seen in systematic review of literature. **Giustini, Mustafa, Freaser & Kamel (2018)**

An analysis identified the results of various social media platforms and its role among the young cancer survivors by collecting details from 30 YA patients and survivors to examine the normative perceptions of social support from their peers and loved ones. They used a qualitative health research approach and came into the

conclusion that the survivors get effective support and care from family members, friends, peers and romantic partners through social media platforms. **Iannarino & et.al.(2016)**

A study conducted at public hospitals in China regarding the utilisation of mobile wellness applications aims to identify the changes in the health care sector with the intervention of mobile wellness apps and disparity in experience of patients between users and non-users of these apps. Quantitative analysis was used to get to the conclusion that adoption of health care mobile applications made improvements in patient involvement in the same.

Lu & et.al. (23 May 2018)

Researchers of a paper bring up the need for modified translations of knowledge on health-related practices by systematic examination and revision by using qualitative method; they proved that the role of online innovations are a key enabler in translating awareness related to the wellbeing. **Mairs & et.al. (2013)**

The study on the usage of social networking applications for work-related purposes among primary health care professionals proved that health institutions should bring in more training activities to secure the usage of mobile applications. Therefor they used a quantitative method to reach the conclusion. **Marin& et.al. (27 May 2018)**

A study on the development of mobile health care applications for the neglected tropical disease has checked the background of mobile health tools and stressed on the usability among rural communities through quantitative methods, the researchers jotted down the technological development and knowledge of people. **Navarroo &et.al. (2018)**

In a research study it was demonstrated that twitter studies on the frequent expression of users based on their thoughts and expressions by measuring the public opinion. They used quantitative method and reached into the conclusion that twitter is having a greater effect on information technology for public health. **Paul &Dredze (2011)**

In a study it was identified that the aspect of social media in condensing the knowledge translation gap and conventional stratified divisions in society. Through qualitative analysis, the author came to the conclusion that adequate communication approaches should be implemented from the mind-set of the patient for better health guidance. **Roland (2018)**

In a research paper it was found that the purpose of the paper was to analyze how social media affect the relationship between patients and healthcare professionals and an overview of the enduring literature of the same. They used qualitative method and proved that social media usage by patients did affect the association between patients and health care professionals and which resulted in the substandard interaction between them. **Smailhodzic & et.al. (26 August 2016)**

In a study it was found that legal constrains in the approval of social media usage among patients and medical management have a potential role and impression in the health care communication field. **Turner (2017)**

In a research paper it was studied that the influence of cancer-care disease-specific hashtags on online communication by using the method of analyzing the amount of tweets and users of the social media tags. **Utengen & et.al.(2016)**

III. METHODOLOGY

In preparation for satisfying the intention of the dissertation, the strategy used was a quantitative one. A survey was conducted and the survey consisted of fourteen questions based on the objective of the thesis. The target

population for this research include smartphone users from major cities of the state of Kerala, while the accessible population was the smartphone users from Kochi and Trivandrum, two highly populated cities of the state. Online form submission website helped to get detailed results of the same. It took around six days for generating 200 samples of the survey. This research used purposive sampling method to develop the sample. Purposive sampling method belonged to the section of non -probability sampling approach. Primary sources of data are through survey. Secondary sources of data are from online journals and online websites. Types of gadgets used are smartphone and smart watch. Dependent variables are lifestyle; credibility and need for these apps, and independent variables are age, gender, education and income.

IV. FINDINGS AND RESULTS

The next chapter deals with the findings and results of the research. The findings have been derived from the research questions and from the research hypothesis. Quantitative method was used to derive required particulars. Data were obtained from online survey which was completed by 200 respondents. The responses gathered were analysed using the SPSS software. The chapter focuses on presenting the collected data in a meaningful way which would assist the discussion that follows.

- **There is a significant difference in the usage of mobile apps related to healthcare on the basis of time, age, gender and occupation.**

Chi-square test is used to analyze the available data. The result is as follow:

Age Wise Comparison

The Table 1 below shows the descriptive statistics of the data. It shows the minimum and maximum values along with total responses, mean and standard deviation.

Table 1: Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Age	200	2.4600	.59174	1.00	4.00
Q13	200	2.0400	1.39215	1.00	5.00

The Table 2 shows the observed, expected and residual values of Age

Table 2: Age

	Observed N	Expected N	Residual
Below 18	4	50.0	-46.0
18-25	106	50.0	56.0
25-50	84	50.0	34.0
Above 50	6	50.0	-44.0
Total	200		

The Table 3 shows the observed, expected and residual values of the variable Time

Table 3: Q13

	Observed N	Expected N	Residual
Strongly disagree	105	40.0	65.0
Disagree	47	40.0	7.0
Strongly agree	2	40.0	-38.0
Agree	27	40.0	-13.0
Not Applicable	19	40.0	-21.0
Total	200		

Table 4 Chi square value of 166.880 [df (degrees of freedom) =3, N(Total Number)=200], p<0.05 is significant at 3 degree of freedom, showing that there is a significant difference in time allotted in the usage of mobile apps related to healthcare on the basis of age

Table 4: Test Statistics

	Age	Q13
Chi-Square	166.880 ^a	158.200 ^b
df	3	4
Asymp. Sig.	.000	.000

0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 50.0.

0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 40.0.

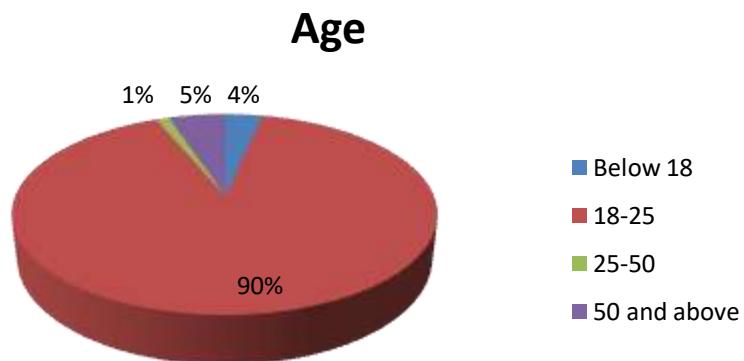


Figure 1: Age

Fig 1 shows that the majority number of people using mobile applications related to healthcare is from the age group of 18 years to 25 years. 90% of the users are from this age group. 5% of the users is from the age group of

50 years and above, and 4% of users are below 18 years of age. Only 1 % of the users are from the age group of 25 years to 50 years. Users from the age group of 18 to 25 years are much more tech-friendly than other groups and thus, they invest more time in new media.

Gender-wise Comparison

The table 5 shows the observed, expected and residual values of the variable Gender

Table 5: Gender

	Observed N	Expected N	Residual
Female	97	66.7	30.3
Male	100	66.7	33.3
Prefer Not to Say	3	66.7	-63.7
Total	200		

Table 6 Chi square value of 158.200 [df(degrees of freedom) =4, N(Total Number)=200], p<0.05 is significant at 4 degree of freedom, showing that there is a significant difference in time allotted in the usage of mobile apps related to healthcare on the basis of Gender

Table 6: Test Statistics

	Q13	Gender
Chi-Square	158.200 ^a	91.270 ^b
df	4	2
Asymp. Sig.	.000	.000

0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 40.0.

0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 66.7.

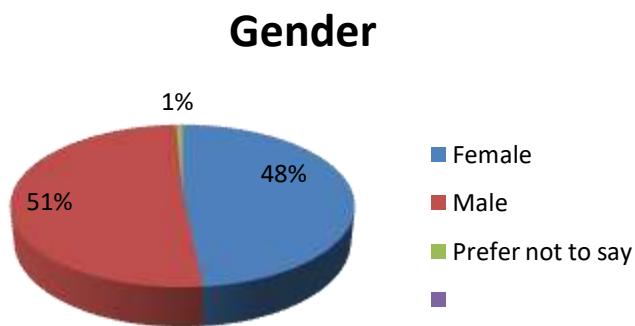


Figure 2: Gender

Fig 2 depicts that the Female and male participants have participated in the survey in a nearly equal ratio which differs only by 3% and out of that 3% there is 1% of people who is not willing to reveal their gender. From the 200 samples taken 51% of the participants are male and 48% are females. This suggests that male participants participated in the survey than slightly more than the female participants. Because men are much more advanced with latest technology and they are much more conscious about their health and fitness.

Occupation-Wise Comparison

The table 7 shows the observed, expected and residual values of the variable Occupation

Table 7: Occupation

	Observed N	Expected N	Residual
Student	75	66.7	8.3
Employed	98	66.7	31.3
Not Employed	27	66.7	-39.7
Total	200		

Table 8 shows that the Chi square value of 158.200 [df(degrees of freedom) =4, N(Total Number)=200], p<0.05 is significant at 4 degree of freedom, showing that there is a significant difference in time allotted in the usage of mobile apps related to healthcare on the basis of Gender

Table 8: Test Statistics

	Q13	Occupation
Chi-Square	158.200 ^a	39.370 ^b
df	4	2
Asymp. Sig.	.000	.000

0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 40.0.

0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 66.7.

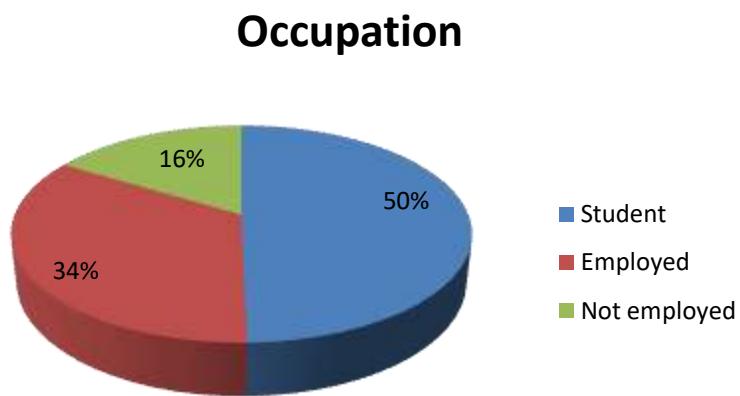


Figure 3: Occupation

Fig 3 indicates that the majority users of mobile apps related to healthcare are students. 50% of the users are from the category of students. Out of the remaining 50%, 34% of the users are from the category of employed persons. The remaining 16% of users are unemployed ones. Thus, students are much more aware about the usage of modern health care applications on new media platforms and they spend more time for learning about its functions.

More than an hour is spent for using these apps

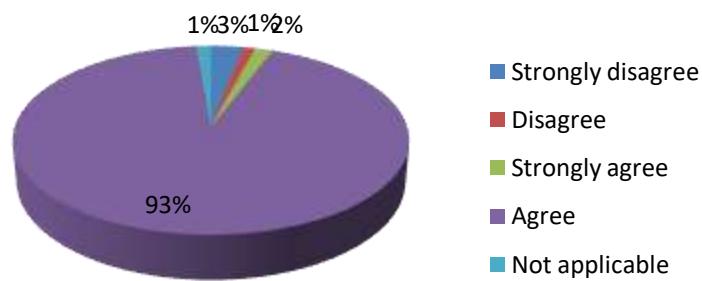


Figure 4: Time

It is comprehensible from fig 4 that around 95% of healthcare app users spent more than one hour on such apps. 93% of the users agree to that statement and 2% of the users strongly agree to the same. 3% of the app users strongly disagree and 1% of the users simply disagree. There is 1% of users for whom the statement made is not applicable. So people are consciously looking forward to meet the impact of new media health care applications in this digital era.

From the above results we can conclude that the gap is substantial in time allotted in the usage of Mobile App related to healthcare depending on the demographic variables age, gender and occupation.

- The frequent usage of Mobile apps related to healthcare, helps in promoting a healthy lifestyle.

Chi-square test is used to analyze the available data. The result is as follow:

Table 8 shows that the Chi square value of 129.320 [df(degrees of freedom) =3, N(Total Number)=200], p<0.05 is significant at 3 degree of freedom, showing that the frequent usage of Mobile apps related to healthcare, helps in promoting a healthy lifestyle

Table 8: Test Statistics

	Q6	Q15
Chi-Square	129.320 ^a	126.350 ^b
df	3	4
Asymp. Sig.	.000	.000

0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 50.0.
0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 40.0.

Mobile apps other than social media is used on a regular basis

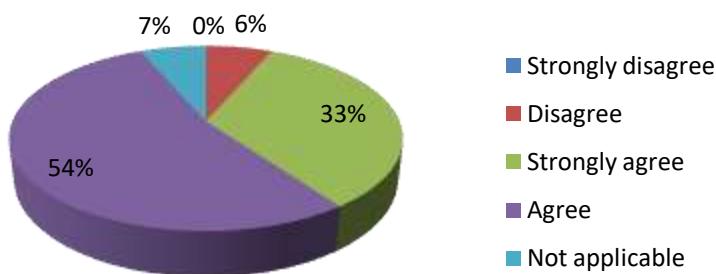


Figure 5: Test Statistics

Out of 200 respondents 87% of them use mobile apps other than social media apps on a regular basis and 13% of the users do not use such apps regularly. It is clear from Fig 5 that out of the 87% of regular users, there are 33% of users who strongly agree to the statement and 57% of the users agree to the statement. And from the 13%, 6% of the users disagree to the given statement and it is not applicable for the remaining 7% of users. The users of certain health care apps are depending the health care apps on a regular basis and considering them as a factor of self-motivation to maintain a healthy lifestyle.

Usage of these apps has helped to stay healthier than before

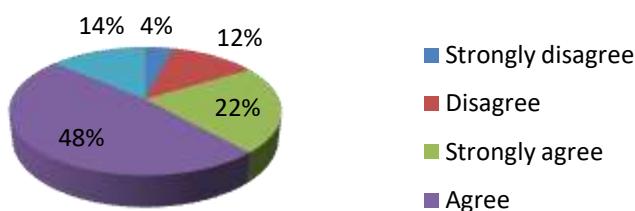


Figure 6: depicts that majority users of mobile apps other than social media

Fig 6 clearly depicts that majority users of mobile apps other than social media agrees to the fact that usage of these have helped them stay healthier than before. 48% of the users who responded agree to the statement and 22% of them strongly agree. 12% of the users disagree while only 4% of them strongly do disagree. The statement does not apply to 14% of the users. However, the regular usage of health care apps aid people to follow their routines for a healthy change.

- There is a high need for mobile apps related to healthcare among Keralites.

Chi-square test is used to analyses the available date. The result is as follow:

Table 9 shows that the Chi square value of 126.350 [df (degrees of freedom) =4, N(Total Number)=200], $p < 0.05$ is significant at 4 degree of freedom, showing that there is a high need for mobile apps related to healthcare among Keralite.

Table 9: Test Statistics

	Q15	Q7
Chi-Square	126.350 ^a	94.500 ^a
df	4	4
Asymp. Sig.	.000	.000

0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 40.0.

Aware about health care apps

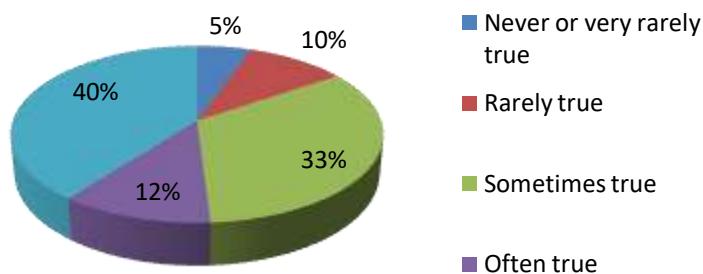


Figure 7: Test Statistics

Fig 7 helps to recognize how aware respondents were of health care apps. 52 % of them were aware about health care apps ,33% of them were not so sure about it and 15% of them were not aware of health related mobile apps. In a tech friendly society like Kerala, majority of the people are aware about the impact of health care apps and it influence them to make use it.

Usage of these apps has helped to stay healthier than before

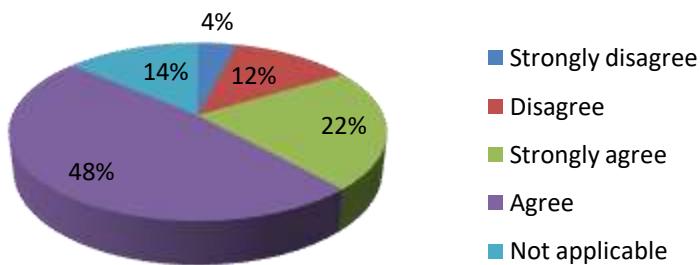


Figure 8 : specifies the very same data

Fig 8 also specifies the very same data as Fig 6 and this clearly depicts that majority users of mobile apps other than social media agrees to the fact that usage of these have helped them stay healthier than before. 48% of the users who responded agree to the statement and 22% of them strongly agree. 12% of the users disagree while only 4% of them strongly do disagree. The statement does not apply to 14% of the users. The usage of these health care applications helps people to follow their health chart related with their day today life style.

- The Mobile apps related to healthcare are highly credible and confidential. Chi-square test is used to analyze the available date. The result is as follow:

Table 10 shows that the Chi square value of 67.080 [df(degrees of freedom) =2, N(Total Number)=200], $p<0.05$ is significant at 3 degree of freedom, showing that The Mobile apps related to healthcare are highly credible and confidential.

Table 10: Test Statistics

	Q11	Q12
Chi-Square	67.080 ^a	168.650 ^b
df	3	4
Asymp. Sig.	.000	.000

0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 50.0.

0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 40.0.

The reason for using health care apps

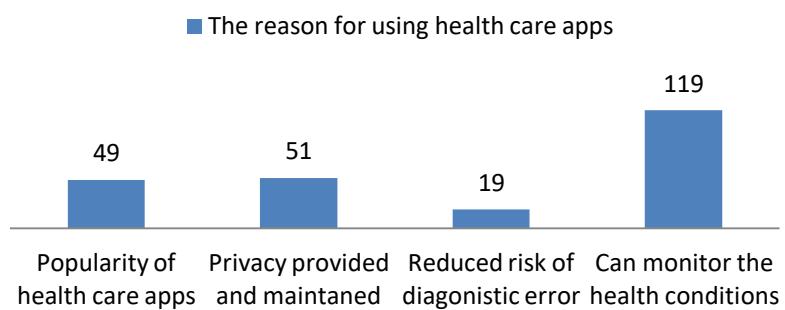


Figure 9: the reason stated by the users for using health related apps.

Fig 9 identifies the reason stated by the users for using health related apps. The respondents were given a chance to state more than one reason and the majority users voiced that health care app users could monitor their health conditions. Privacy provided and maintained by such apps was the second important reason mentioned. Popularity of health care apps and reduced risk of diagnostic error became the third and the fourth reason for choosing health care apps.

Health care app used is a paid one

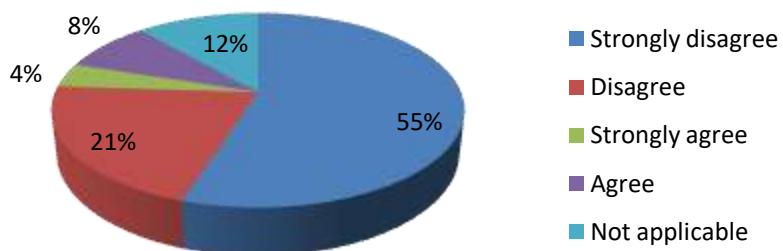


Figure 10: mostly used healthcare apps are not paid ones

From the above Fig 10, it can be concluded that, mostly used healthcare apps are not paid ones. There are only 12% of users who use paid healthcare apps. Out of that 12%, 8% of users agree to the statement and 4% of them strongly agree. 21% of the users disagree and 55% of them strongly disagree, which makes a majority. And there are 12% of the respondents for whom the statement is not applicable. The popularity and availability of apps influence people to use it.

V. DISCUSSIONS AND ANALYSIS

This research presents contemporary empirical findings regarding health application usage and it aimed to analyses the need and effect of healthcare apps in everyday lives of people. Social networking has become an unavoidable aspect of life today. So people use mobile apps other than social media in a huge number and that too on a regular basis. Innovations in technology might be the reason for the same.

Health care applications are used widely by people living in the urban space of Kerala. The survey taken from 200 respondents of two major cities of Kerala concludes that healthcare apps have made great impact on the lives of these users. Healthcare apps are used mostly by men and from the age group 18 years to 25 years of age. The reason for this is presupposed to be the social framework in which men and boys were expected to learn about machines and technologies. This might have made men closer to the technology than women are. Although women users of health care apps is just some few number lesser. These apps are used mostly by working professionals.

The healthcare apps itself have different genres and among those daily healthcare related apps have more users. Such apps which aid in daily healthcare would probably help its users to follow some systematic healthcare routines which would assist them lead a healthy life. Beauty and fitness is the second widely used genre. The food habits these days make people more prone to lifestyle diseases which can be prevented to a limit by proper exercise. The reason stated by the users for their interest in the apps is that these would help them monitor their health conditions. Medical check-ups these days have become overpriced which is assumed to be the reason for the same. Health care mobile applications like every other mobile app have two categories which is a paid one and a non-paid one. Non- paid apps come up with the basic attributes while the paid apps allow users to access advances features. Most of the users do use non-paid apps and the cost and also the availability of basic features can be one of the reasons. The study resulted that majority of the users does not use them for more than an hour and majority

does not use more than one health care app while a small majority do use. Similarly healthcare apps have gained popularity over the past one few years and the majority of the respondents have been using these for less than 12 months. This particular study gets to a conclusion that people of Kerala, specifically from urban areas have been using health care based mobile applications and the usage have helped the users stay healthier. This research which tries to analyses the effect of health care apps also have a similar conclusion that the users of health care app have claimed that the usage have aided in remaining fit.

VI. CONCLUSION

The paper studied the available health care apps on mobile phones and smart watches and also figures out that they are easily manageable devices among the users. The possibility of anytime consultation and accessibility are considered as the most influencing factors and which provided a user friendly atmosphere. Thus users have control over their medical decisions now a day. The study's ultimate goal was to support the scope and effects of mobile healthcare applications on the daily lives of its users in Kerala and the analysis of 200 samples from an online survey questionnaire of two selected cities in Kerala -Trivandrum and Kochi resulted that the health care applications has a tremendous impact on the lives of users, especially from the age group of 18 to 25 and among them, 50% are from the category of students.

The demographic variables such as age, gender and occupation were the key factors that affect the usage of time. A large majority of users agreed that the usage of health care apps helped them to stay healthier than before. Apart from privacy, users can directly monitor their health condition by using such new media applications. People opted both paid and non-paid health care apps for their daily workout routines, beauty treatments, fitness and pharmaceutical needs. All such facilities make access to health care more affordable, efficient and comprehensive for the users in Kerala.

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