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Research Article

Impact of Mobile Application Training Session on Understanding and Usage of the Health Scheme among Indians during Covid-19 Pandemic

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Abstract: Covid-19 has changed people's traditional healthcare practices due to fear of infection and the lack of healthcare facilities. Mobile-based applications have already impacted the country, and many apps are now available to help individuals with various vital healthcare activities. On the other hand, people are hesitant to accept their usage or utilize it to look for multiple health plans. During the Covid-19 outbreak, the study evaluated the impact of a mobile application training session on understanding and usage of the Health Scheme among Indians. The study design was a one-group pretest-posttest quasi-experimental design. Seventy volunteers were recruited for the study utilizing convenient sampling from Sikkim, Manipur, and Bangalore. A knowledge questionnaire and a practice checklist were used to collect pre-test data. The researcher instructed the subjects on how to utilize health-related mobile applications. After a seven-day gap, a post-test was conducted. This was carried out to assess the knowledge and mobile phone utilization practice. During the Covid-19 pandemic, data analysis demonstrated that mobile application-based training session was beneficial in enhancing understanding and usage of the Health Scheme.
Keywords: Mobile application, Covid-19, Knowledge, Utilization, Effectiveness, Health scheme.

Introduction

The country's health is a critical component of the country's economic growth and stability. With a population of 1.21 billion people, 68.86 percent of whom live in rural areas, a large segment of the public is ignorant of various mobile applications to access health plans at their fingertips [1]. While mobile-based applications have already impacted the country, many apps are available to help individuals with various critical tasks. Information and time management, health record maintenance and access, communications and consultation, reference and information collecting, clinical decision-making, and medical education and training are just a few of the Apps available. However, its use in accessing health care facilities and information on various health plans is still in its infancy. The Government is now using it to help individuals access its healthcare system [2].

One such initiative, Ayushman Bharat, was established in 2018. Although the Government of India has distributed information about each program through pamphlets, public knowledge of these initiatives is low. It is necessary to have a thorough understanding while selecting the right strategy for their demands. According to official figures, the plan has qualified more than 20.3 million Indians. Approximately 1.4 million patients have received free treatment due to the program. One such hospital that participates in the Ayushman Bharat plan is the All India Institute of Medical Sciences (AIIMS) in New Delhi. Even though almost 8 million individuals have visited the

Ayushman portal to determine if they are qualified, some patients at AIIMS hospital had no clue as to whether they were eligible. Even in the most isolated areas, efforts were made to enlighten the population. The railway station is decked out with posters and banners [3,4]. Ganapathy et al. mentioned that the increasing availability of mobile connectivity needs to be exploited by offering healthcare through a mobile medium, popularly known as mobile health or mobile health scheme. Among the subjects, 59% used their mobile phones for social networking, while 52.4% used Wi-Fi. The study revealed that Health care providers are already using mobile value-added services [5].

Whittaker and Smith [6] examined mobile phone usage for healthy behavior change. They stated that once mobile phones have permeated people's daily lives, they can aid in various health-related functions. Consumers can use them to seek health information such as symptoms and treatment, reducing waiting time and transportation costs [6]. Niederdeppe et al. [7] stated that understanding various health systems and apps provides users with a safer and more confidential environment mainly when dealing with gynecological, psychiatric, cosmetic surgery, and other patients with sensitive concerns [7]. Researchers have noted that health-related topics are trendy on the internet. Customers try numerous treatment solutions which they can find from more trusted health information providers via their mobile phones [8]. Studies focusing on specific Indian health schemes such as the Vajpayee Arogyashree scheme to understand BPL household's awareness and perceptions revealed that they have limited knowledge of the scheme's benefits, diseases covered and impaneled hospitals. This results in negative perceptions of the scheme, necessitating creating awareness through media, newspapers, and special camps [9].

The present financial burden due to Covid's ill-health and unemployment and the lockdown has hit all, especially the poorest of the poor. Unless and until they are educated on the free and subsidized health schemes readily available, Covid-19's extensive influence will directly impact the morbidity and death curve. There has been a spike in demand for hospital beds and other healthcare services. People are hesitant to leave their houses and go to a health care institution, even for essential treatment, due to the virus's rapid spread. To stop the spread of the Corona Virus, countries worldwide have implemented lockdowns or curfews [10]. Covid-imposed circumstance necessitates using a mobile-based application to access healthcare facilities. Despite the numerous advantages that mobile apps have provided, more standards and validation processes in this area are still needed. There is a disparity in the number of persons who use these facilities. Given the severity of the Covid epidemic and the scarcity of resources, the current study will maximize the use of the available healthcare facilities. This research should lead to the upliftment of the last man in line, ensuring that the poor man receives all of the advantages of the country's progress. Finally, as the scheme expands, we will continue to reduce catastrophic out-of-pocket health spending and improve access to high-quality health care. The population's unmet need for hospitalization will be met and aid in moving closer to the vision of a healthy India and pave the way for Universal Health Coverage [11].

The study's reason was to assess the training program's effectiveness regarding the mobile application on the knowledge and utilization of the Health Scheme during the Covid-19 pandemic among people of India. The study sought to determine the difference between the mean pre-test and post-test scores of knowledge and utilization of the Ayushman Bharat Health Scheme mobile application, especially Covid-19.

Materials and Methods

A Quasi-experimental one-group pretest-posttest design was used for the study. The obtained data were measured at two different points of time, i.e., before and after the administration of the teaching program. The study participants were 70 individuals interviewed during 2020 in rural areas of Sikkim, Manipur, and Bangalore. A convenient sampling of subjects was undertaken from the three states. Subjects were older than 18 years of age, literate, and possessed an Android phone to be included in the study. Those who could not speak English, Kannada, Hindi, Nepali, and Manipuri were excluded from the study.

Measurement tools used for the study included:

Demographic information: demographic information such as age, sex, religion, educational status, and occupation were collected using this tool.

Knowledge questionnaire: it consisted of a structured questionnaire of 20 items which was used to assess the knowledge of the subjects before and after the administration of the teaching program regarding mobile apps for health care.

Practice Checklist: Mobile phone utilization was assessed using a checklist. The checklist consisted of eight items used to determine how the subjects use the mobile app to find out their eligibility, nearby hospital, e-card center, and its use in calling an ambulance.

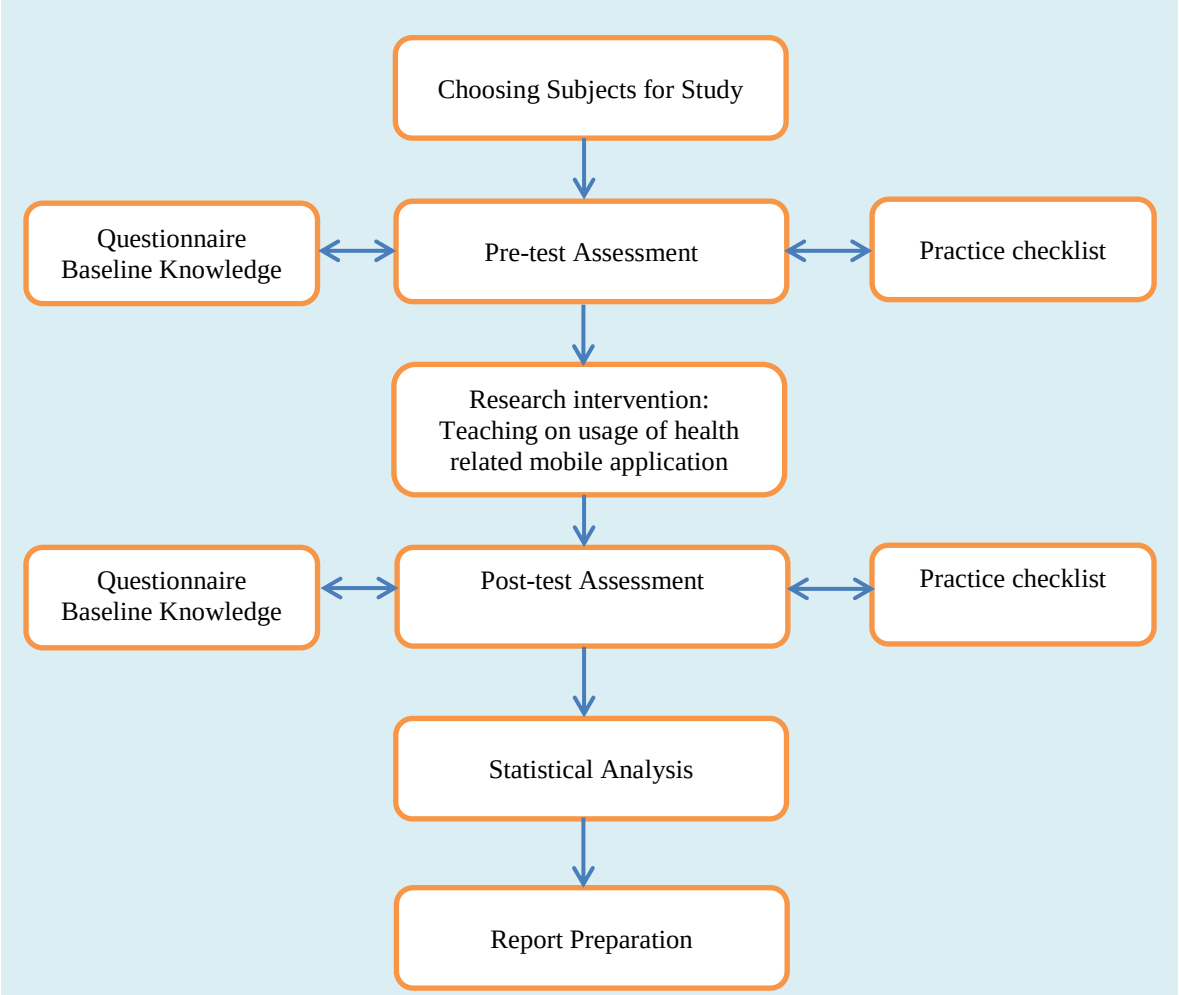

Figure 1. The step-by step research method

After obtaining the institutional approval from the ethical research committee, volunteer participants were recruited from the subset of cities from Sikkim, Manipur, and Bangalore. Data was collected after explaining the purpose of the study and obtaining informed consent from the participants for the study. Subjects were guaranteed to maintain the confidentiality of the data collected, and the obtained information was kept accordingly.

Participants were contacted by telephone to arrange a convenient time for the interview. Though the study was planned to be a face-to-face interview, during the time of data collection as the cases of Covid-19 were emerging, depending on the situation, face-to-face and online interview mode of data

collection was carried out. Fifty-two subjects were interviewed in person, and the remaining 18 were interviewed using an online platform. Depending on the familiarity and convenience of the participants, Zoom or Google Meet was used. The teaching program was also carried out similarly.

The demographic information was collected, and the data before the intervention was collected using a knowledge questionnaire and Practice checklist. The researcher then trained the subjects on using various health-related mobile applications and their use. The content was pre-prepared and validated by experts. After a week, a post-test was carried out to assess the knowledge and mobile phone utilization practice. This was done to evaluate the effectiveness of the training program that was given.

The key analysis instrument used for the study is SPSS version 21 (IBM Corp, Armonk, New York). The mean scores were used to promote meaningful discussion of findings and comparisons with other studies. Descriptive statistics such as frequency and percentage were used to fulfill the study's goals. Inferential statistics used for the study was t-test.

Results and discussion

The data collected by the researchers using the demographic Performa, knowledge questionnaire and the observational checklist was analyzed and presented.

The majority of the participants in the study were in the age group of 18 to 30 years (41.4%), were females (60%), married (54.3%), and belonged to the Hindu religion (84%). Most of them (56%) were graduates and above, and 42% were professionals. Many subjects were from joint (50%) and Nuclear (45.7%) families. According to the educational status, the majority (56%) of subjects were educated up to graduation and above. Regarding occupation, the majority (42%) of the subject were professionals.

Level of baseline knowledge of subjects regarding mobile health apps

The questionnaire was used to assess the knowledge level of subjects, and the level of knowledge was graded into inadequate, moderately adequate, and adequate.

Table 1. Frequency and percentage distribution of subjects based on their knowledge score of subjects on Health Scheme (n= 70)

Variables	Score	Pre-test Score		Post-test score	
		Frequency	%	Frequency	%
Inadequate	<10	42	60	3	4.28
Moderately Adequate	11-15	25	35.8	18	25.71
Adequate	16-20	3	4.2	49	70

Table 1 shows that majority of the subjects (60%) had inadequate knowledge of the Health Scheme based on the obtained pre-test scores. During the post-test, majority of subjects (70%) had adequate knowledge scores, while only 4.28% had inadequate knowledge scores.

Table 2. Pre-test and Post-test knowledge scores of a subject in the experimental group (n= 70)

Variables	Experimental group			
	Mean	SD	t value	p-value
Pre-test	10.11	2.82	16.70	p<0.001
Post-test	16.53	2.64		

The mean ± SD of the experimental group in the pre-test is 10.11±2.82 and in the post-test is 16.53±2.67, which is statistically significant (16.70, p<0.001). This shows a substantial improvement in the knowledge score after the intervention.

Table 3. Frequency and percentage distribution of subjects based on the post-test utilization of Health Scheme (n= 30)

Variables	Score	Pre-test utilization score		Post-test utilization score	
		Frequency	Percentage	Frequency	Percentage
Inadequate	<3	23	76.6	0	0
Moderately Adequate	4 to 5	7	23.4	2	6.6
Adequate	6 to 8	0	0	28	93.4

The data from Table 3 shows that most of the experimental group subjects (76.6%) had inadequate utilization of the Health Scheme during the pre-test. The post-test utilization score indicates that none of them had an inadequate score, and 93.4% had an adequate utilization score regarding the Ayushman Bharat Health Scheme.

Table 4. Comparison of pre-test and post-test scores in the experimental group based on health scheme utilization (n= 30)

Variables	Experimental group			
	Mean	SD	t value	p-value
Pre-test	2.57	1.35	29.61	p<0.001
Post-test	6.97	1.18		

The data from table 4 shows that the experimental group's mean pre-test utilization score was 2.57 ± 1.35 and post-test utilization score was 6.97±1.18, respectively. Since the obtained t-value was greater than the critical value at 5% level of significance for 29 degrees of freedom, it was inferred that there was a statistically significant difference in pre-test and post-test utilization scores, indicating the effectiveness of mobile applications during the Covid-19 pandemic.

The data obtained during this study was parallel to those reported by earlier studies. An earlier survey reveals that in Bihar and Haryana, the awareness level of the Ayushman Bharat app is less than 20%. Following a significant acute encephalitis syndrome epidemic in Bihar that claimed over 140 lives, a poll found that just 10-15% of people are aware of the plan. In comparison, awareness levels in Haryana are marginally higher but still fall short of 20%. This is consistent with the findings of the current survey, which indicated that the majority of individuals living in rural regions across India have a limited understanding of the Ayushman Bharat Health Scheme, with just 4.2 percent having good information.

Garg et al. [12] in their study to assess the efficacy of PMJAY (which is part of Ayushman Bharat), found that participants in the plan did not enhance hospital usage, nor did it improve access or financial protection in the state. This might be due to people's lack of understanding and ignorance about the plan, causing them to seek other solutions such as going to private clinics and physicians for their concerns. According to a survey conducted by Manuja et al. [13] 44.7 percent of households are registered in health insurance plans, with 75.0 percent of them renewing their plans regularly. This indicates that individuals have awareness regarding health insurance but not so about health care plans. According to a study conducted by Kanore and Satpute [14] in Pune, Maharashtra, to determine if individuals from poor socioeconomic backgrounds in the city are aware of the plan, 49 percent of respondents had heard about it. However, it also demonstrates that roughly half of the public is unaware of the program. None of the 49 percent of those who have heard of the plan is aware of its benefits. None of them know who the plan's beneficiaries are or if they are eligible to enroll, concluding that the Central Government's, state governments, and local Government's attempts to raise awareness of the scheme are not yielding the desired results [14]. As a result, the authorities must step up and implement newer, more effective, and more robust methods to improve people's awareness of the plan and their ability to use it.

In the current study, majority (56%) of subjects are educated up to graduation level and above, and 42% are working as professionals in their respective fields. This shows that irrespective of the education level or professional status, majority of the study participants remained unaware of the health insurance scheme and where and how to enroll in it. By creating awareness in them regarding the various schemes available and their utilization, better results can be achieved. The findings of the study also supported this as the pretest-post-test comparison of utilization score shows that the obtained p-value (0.005) is lesser than the 0.05 level of significance and hence infers that there is a difference in the knowledge scores among the respondents' pre and post-test [15]. There is a shortage of knowledge about any government-sponsored initiative in India, particularly in rural regions. In the present study, only after intervening through training did 97.5% of the subjects showed adequate utilization of the Health scheme [15]. Since the sample size was small, the generalization of the findings was limited. Face-to-face interviews and teaching were not possible for some subjects due to the crucial situation due to COVID 19.

Conclusions

As the evidence base for health mobile apps continue to grow, investing on these health care apps will be essential. The hour's need is to alert the general population about such arising health care schemes. This is crucial for meeting the health needs of the people living below the poverty line. Significant changes are to be implemented to achieve the ultimate goal of Universal Health Care [16].

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Conflicts of interest: The authors declare no conflicts of interest.

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