Internship Training at
Napier Healthcare

Patient portal influence on health seeking behaviors of the individual

By: Shweta Bhaskar
PG/20/079

Under the guidance of

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PGDM (Hospital and Health Management)

2020-22

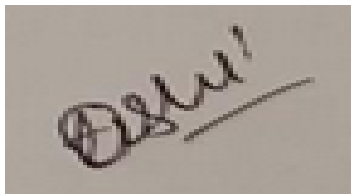# International Institute of Health Management Research
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The certificate is awarded to SHWETA BHASKAR In recognition of having successfully completed his/her internship in the department of HEALH IT and has successfully completed his/her Project on PATIENT PORTAL AND ITS INFLUENCE ON HEALTH SEEKING BEHAVIOUR OF THE INDIVIDUAL from NAPIER HEALTHCARE. She comes across as a committed, sincere & diligent person who has a strong drive & zeal for learning. We wish him/her all the best for future endeavors.

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This is to certify that Shweta Bhaskar student of PGDM (Hospital & Health Management) from International Institute of Health Management Research, New Delhi has undergone internship training at Napier Healthcare from 10TH MARCH to 10th June. The Candidate has successfully carried out the study designated to him during internship training and his/her approach to the study has been sincere, scientific and analytical. The Internship is in fulfillment of the course requirements. I wish him all success in all his/her future endeavors.

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Certificate from Dissertation Advisory Committee

This is to certify that Ms. Shweta Bhaskar, a graduate student of the PGDM (Hospital & Health Management) has worked under our guidance and supervision. He/ She is submitting this dissertation titled " PATIENT PORTAL AND ITS INFLUENCE ON HEALTH SEEKING BEHAVIOUR OF THE INDIVIDUAL" at "NAPIER HEALTHCARE" in partial fulfillment of the requirements for the award of the PGDM (Hospital & Health Management).
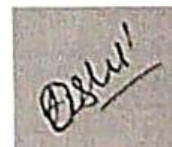
This dissertation has the requisite standard and to the best of our knowledge no part of it has been reproduced from any other dissertation, monograph, report or book.

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Associate professor
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Tashi Mishra
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IIHMR Delhi

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And submitted by SHWETA BHASKAR……………………………..

 Enrollment No. …………PG/20/079……………………………

Under the supervision of ……………ANANDHI RAMACHANDRAN………………………………………………………

For award of PGDM (Hospital & Health Management) of the Institute carried out during the period from ……10th march……..…….. to …………18th june………………..

Embodies my original work and has not formed the basis for the award of any degree, diploma associate ship, fellowship, titles in this or any other Institute or other similar institution of higher learning
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FEEDBACK FORM

Name of the Student: SHWETA BHASKAR

Name of the Organization in Which Dissertation Has Been Completed: NAPIER HEALTHCARE

Area of Dissertation: PATIENT PORTAL
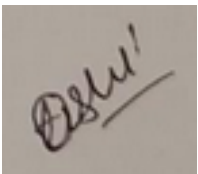
Attendance: 98%

Objectives achieved: yes

Deliverables: product development

Strengths: She is a Quick learner and is a very smart worker, has good communication. She has that attitude of let's get this done and is a great team player.

Suggestions for Improvement: Has much more potential which she can utilize with more focus, needs to identify and communicate roadblocks early on in a project so that last moment problems can be avoided.

Signature of the Officer-in-Charge/ Organization Mentor (Dissertation)

Tashi Mishra

Date: 22/06/2022
Bangalore

PATIENT PORTAL SATISFACTION AND ITS INFLUENCE ON HEALTH SEEKING BEHAVIOR OF THE INDIVIDUAL

SHWETA BHASKAR | PG/20/079 | 15 April 2022
MENTOR: ANANDHI RAMACHANDRAN

Index

List of Figures

BACKGROUND

As the rates of chronic diseases increases in India, there is an increasing need for disease management healthcare. Healthcare professionals, on the other hand, have limited resources to satisfy the demands of rising populations who require ongoing care and health maintenance (e.g.: patients with diabetes and obesity). As a result, the healthcare industry now expects increased efficiency in patient communication. Many healthcare professionals hope that electronic health (e-health), which is defined as the use of digital media and online communication technologies to improve patient care, would assist meet this need. Some established digital communication strategies include patient portals, electronic health records (EHRs), and healthcare provider websites. These digital technologies enable safe, asynchronous patient-provider contact, which can improve communication efficiency and perhaps minimize provider resource demands.[1] Electronic health records (EHRs) are becoming more widely used, and they offer a variety of benefits for improving patient–provider communication. Patient portals, also known as connected personal health records, are electronic access points into the EHR that can perform a variety of roles to improve communication. Patients can send encrypted messages to clinicians, view test results, refill medications, schedule visits, and even participate in specific illness management programs through many of these apps.[2]

A patient portal is a protected online service that enables patients convenient 24-hour access to personal health information from anywhere with an Internet connection. Patient portals differ from EHRs in that EHRs are owned, maintained, and updated solely by healthcare institutions, whereas patient portals allow patients to engage with their own health information. By enhancing patients' access to and management of their health information, patient portals have the potential to enhance health outcomes. As a result, they have the ability to encourage patient empowerment, as well as improve care satisfaction, quality, and patient-centeredness in healthcare delivery. Portals were created to give people a way to take control of their health care. The use of health care portals by patients has been found to improve health outcomes.[3]
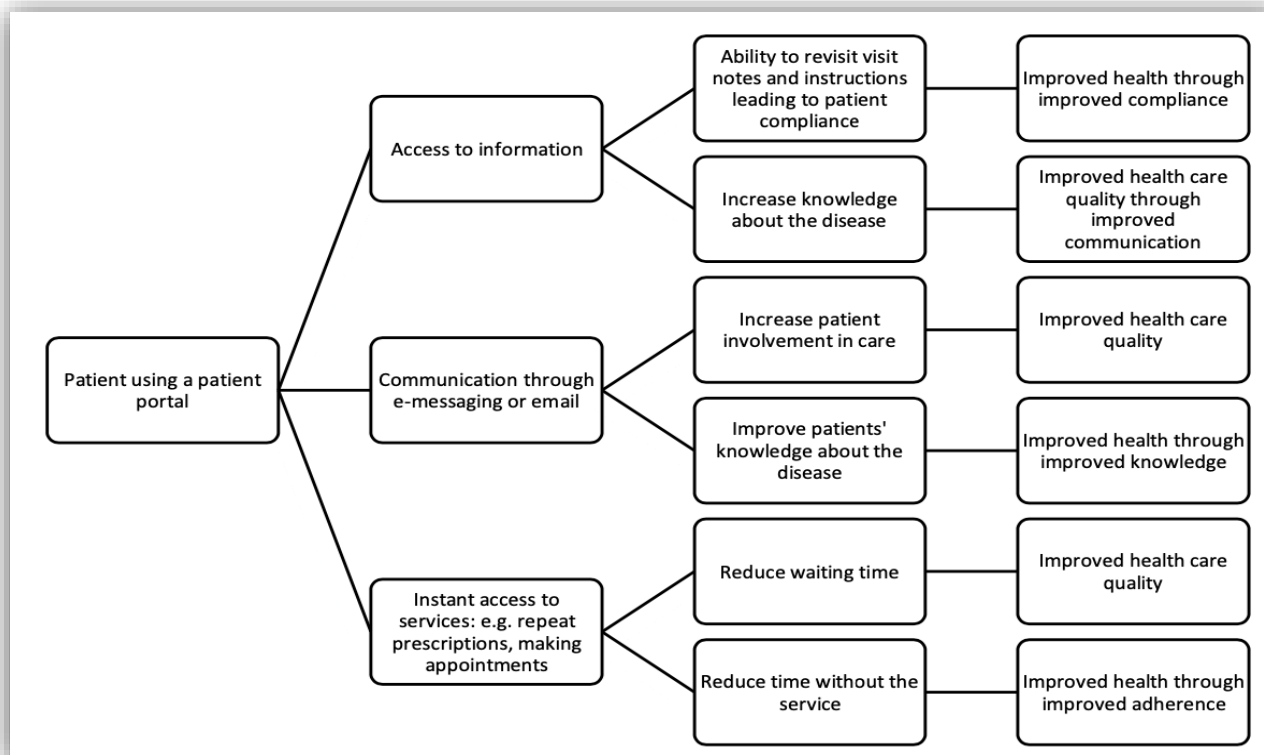
Figure 1: Theoretical framework of how patient portal use could lead to improved health and health care quality (Quantifying patient portal use)

Despite their inception in the late 1990s to improve patient participation, patient portals did not become widely used until 2006. According to reports, 90 percent of health-care institutions now provide patient portal access, with the other 10% planning to do so in the near future. However, many people who sign up for patient portals never use them, and the challenges to adoption and retention that is, real use after enrollment – of patient portals are unknown. Patient portals have usually poor participation rates, despite their potential benefits.[4] While the reasons for low overall enrollment and disparities are unknown, several theories have been proposed, including a lack of internet access, differences in computer literacy or technical skills, patient attitudes toward communicating with providers electronically, and patient preferences for access to their personal health information.
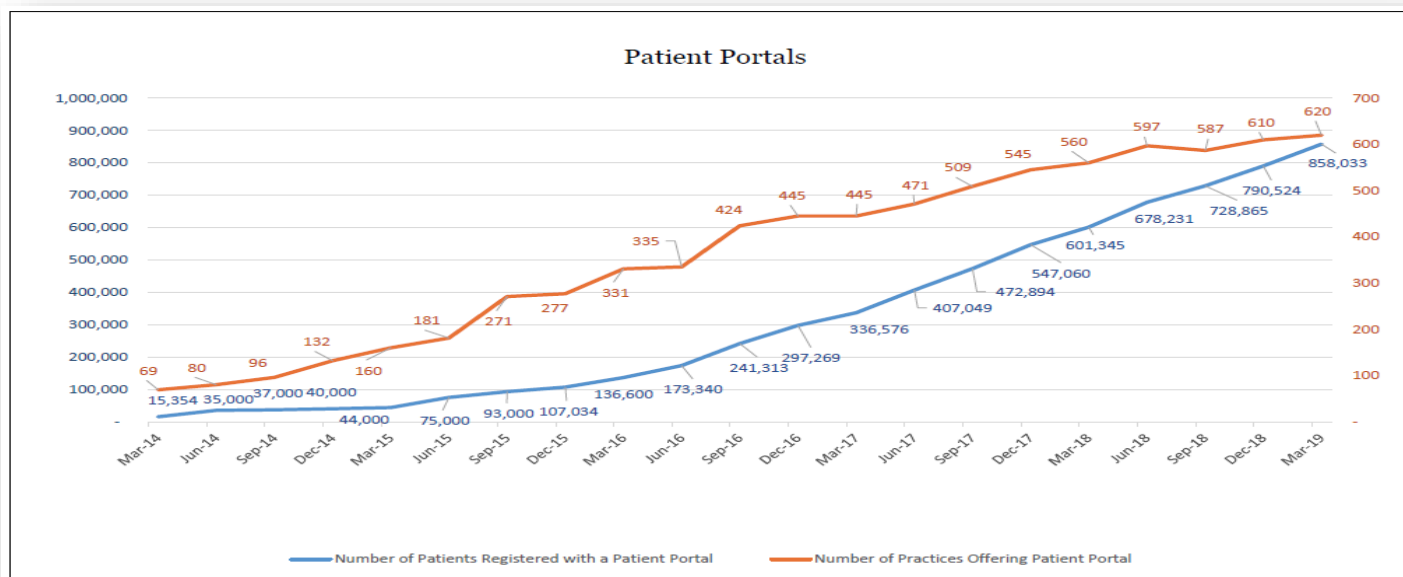
Fig 2.Patient portal use in 2014 to 2019

PRIMARY OBJECTIVE

This study is aimed to empirically validate the factors influencing patient portal use satisfaction and its influence on health seeking behavior of the individual

Specific Objectives:

- To understand the reasons for enrolling in a patient portal by an individual.
- To identify patient reported challenges in enrolling and using patient portal.
- To examine the factors influencing patient portal satisfaction.
- To assess the influence of patient portal satisfaction on portal usage.
- To understand the association between patient portal usage and health seeking behavior of the individual.

LITERATURE REVIEW

The study uses and users of patient portal published in pub-med states that patient portals offer the potential to boost patient participation in health-care decisions. Several advantages have been connected to the implementation of a patient portal such as the adoption of a patient portal could

lead to better clinical outcomes, improved patient-provider communication, quality of care, improved self-management, and a higher level of patient satisfaction. There is evidence that employing a patient portal for follow-up care of patients with atopic dermatitis results in significant cost savings, mostly due to reduced job absenteeism. However, the claim that using patient portals reduces health-care consumption has yet to be proven.[5]

According to the study **Interventions to increase patient portal use in vulnerable population** published in pub med central in 2019, researchers thought that portals would help to eliminate health inequities but, vulnerable groups frequently have lesser health literacy and face major hurdles to care. Messaging, online education, and automatic medicine refills are examples of portal features that may improve convenience, promote health literacy, and remove at least some obstacles to care, hence lowering health disparities. Unfortunately, more than a hundred studies have now revealed significant health-equity-relevant discrepancies in portal use. Vulnerable populations, such as the elderly, racial minorities, and people with low financial position, limited health literacy, chronic sickness, or impairments, use portals less frequently.[6]

The study "Understanding patient portal use" published in 2013 says, we don't know much about how patients use typical patient portal capabilities for medication management and adherence assistance, or what tools are currently missing from these platforms that may be introduced to fulfil patients' medication adherence needs.[7]

Study Patient reported barriers to enrolling in a patient portal published in Journal of the American in Medical Informatics Association in December 2019 Patient portals have usually poor participation rates, despite their potential benefits. In addition, some studies have discovered significant differences in enrollment by race and ethnicity. Disparities in the utilization of the patient portal become less noticeable after patients enroll While the exact causes of low overall enrolment and discrepancies are unknown, various theories have been presented. Lack of online access is one possible factor; nevertheless, differences in portal use have been observed even in locations where internet access is not a problem.[8]

Despite widespread interest in patient portal use and adoption, studies on patient portals differ in the actual metrics used to operationalize and track utilization, resulting in unsystematic and incommensurable characterizations of use, according to Quantifying patient portal use an article published in the Journal of medical internet research in February 2019. There has never been a systematic review of the metrics used to examine patient portal usage.[9]

According to the study **Design simplicity influences patient portal** published in *Journal of the American Medical Informatics Association* in April 2016 states that despite significant financial investments and excellent intentions on the part of patients, patient portals are only used by a small fraction of patients. The lack of attention paid to the impact of patient portal design is likely a contributing reason in the low adoption of patient portals. Patient portals, like all other

e-health programs, rely on user interface design to deliver information and give patients the tools they need to communicate with their doctors.

In a study Disparities in registration and use of an online patient portal among older adults' states 30–70% of eligible patients accept the offer of a patient portal but differential acceptance of this technology between population sub-groups may worsen disparities in health outcomes. Low use among socio-demographic subgroups like racial and ethnic minorities, as well as older patients. Chronic illnesses are more common in the elderly, which has been found to boost the use of patient portals. However, patient portal usability is a big obstacle, and this may be a particular issue for older persons who are less experienced with information technology, which is why they are less likely to access online health information, such as treatment and healthcare advice.[10]

The study **Use and the Users of a Patient Portal: Cross-Sectional Study** published in September 2018 says, portal use is influenced by factors such as age, educational level, ethnicity, and health literacy, provider endorsement, communication tactics, the ease of use of a portal, the relative advantage of a portal and the observability of the benefits of the portal transpired to have a positive influence on portal use. [11]

METHODOLOGY

- A total of 83 people participated in this study. The data was collected in the form of questionnaire and the survey was conducted through Google document. The questionnaire was divided into two sections. The section 1 consists of 4 primary questions including consent form, email, age and profession. The section 2 consists of 15 questions including multiple questions, short answers and long answers. The questionnaire was sent to people through social media applications such as Facebook, LinkedIn and WhatsApp to collect the responses. The collected data was then analyzed using excel with the help of graphs and pie charts.

- Study design: The study design selected is descriptive, quantitative study design.
- Sample design: Convenience Sampling.
- **Tools and techniques:** The tools that are used in this study are Google form, Excel/Tableau and social media for collecting responses.
- Data Collection Method- Primary data collection
- Ethics and Confidentiality- All the ethical consideration and related queries has been satisfied on the beneficiary as well as from researchers side with proper consent from the study participants and permission from student review board ethical committee.
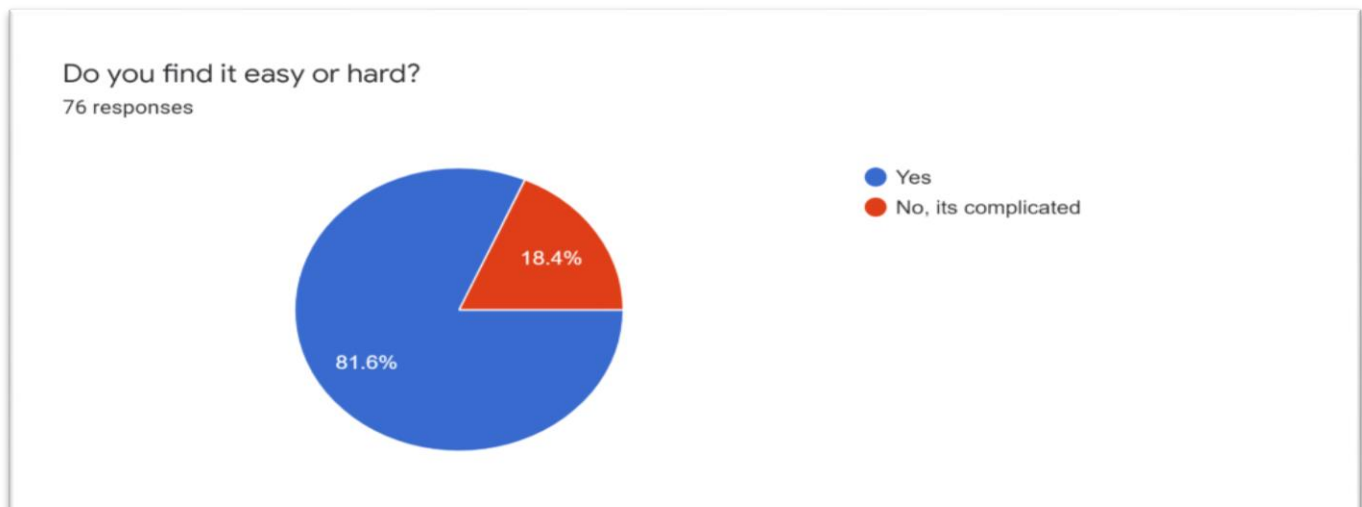
RESULT:

With the help of our questionnaire, we found that there were 66.3% of people who have used the patient portal. But there were 33.7 % of the people who never got the need to use the portal.
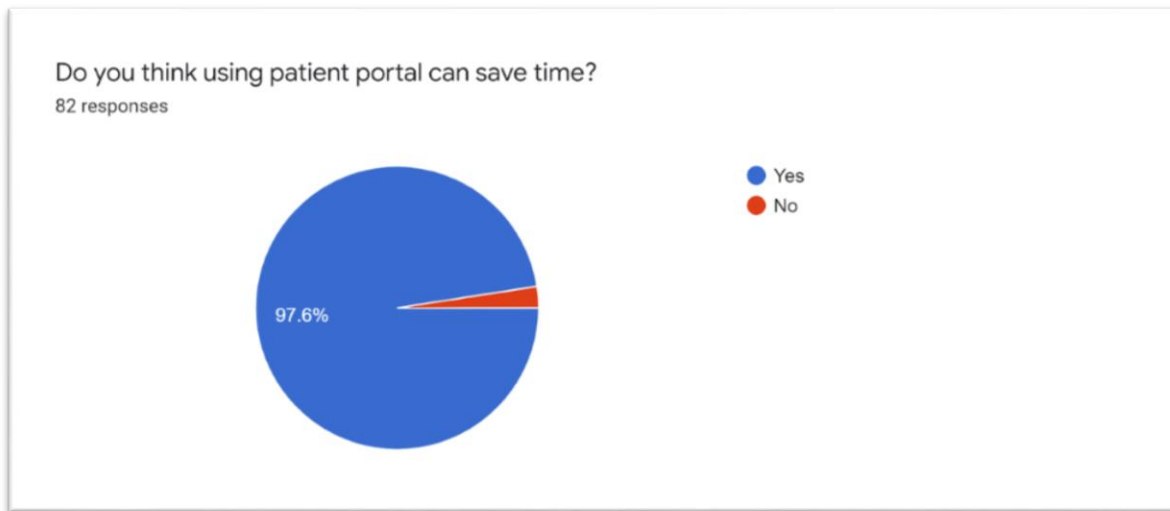
Dig.1 Usage of portal
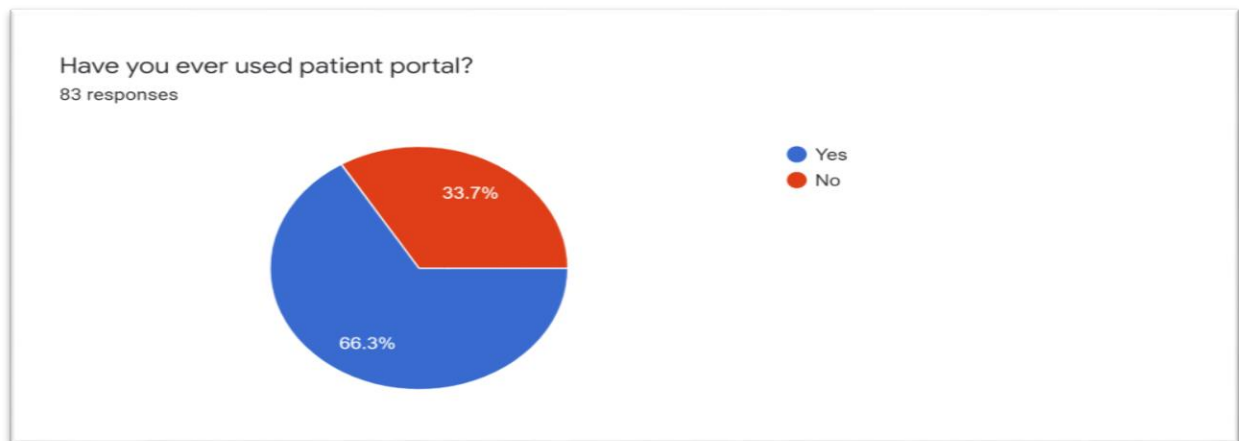
- There were 82% of people who find it easy to use the portal but 18% of people found it difficult.
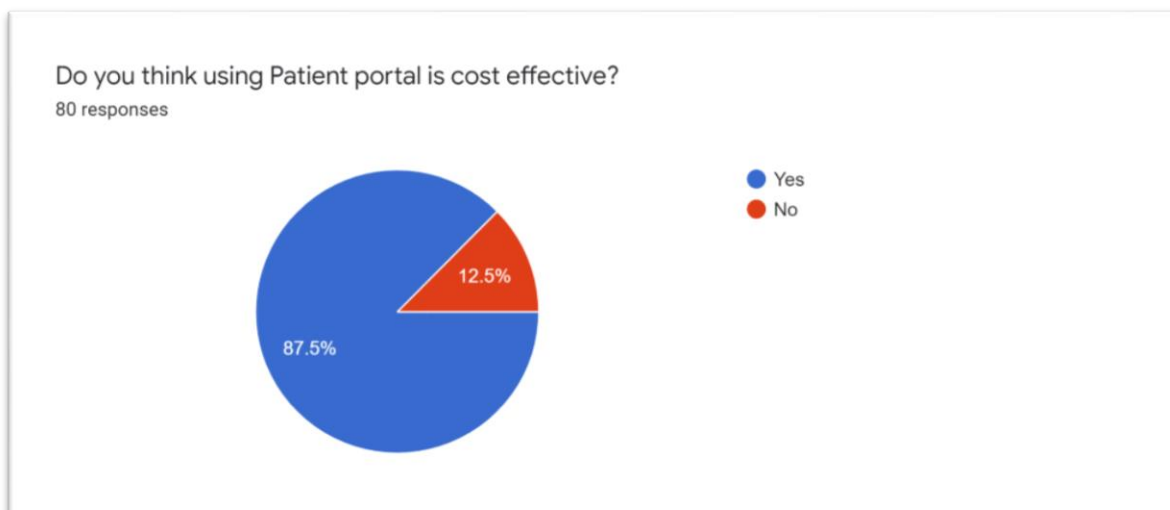
Dig 2. Feasibility

- 98% percent of people believe that patient portal can help in saving their time and. Can act as a useful technology in saving time for both the patient and the provider.

Dig 3.Time saving

Out of all the responses there were 88% of the people who believes that patient portal is cost effective but 13 % of people. Relieve that it doesn't save the finances.


Dig 4.cost effectiveness

- In our study we didn't observe privacy concern as a barrier in using patient portal. 90% percent of people felt comfortable in sharing their health data with the portals and the number of people who feel uncomfortable in sharing the data was very less.
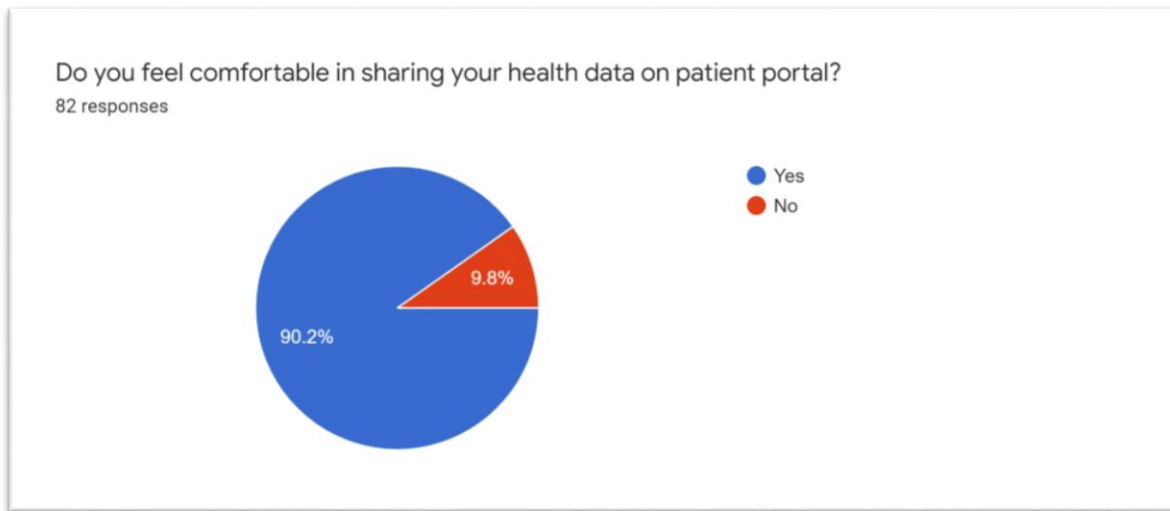
Dig 5. Comfortability in sharing Data

•The response that we received on this question was a bit tricky as the reasons users mentioned apart from yes and no options were so many. There were 57% of people who find online consultations with the doctors useful and satisfactory. 26 % percent of people found it unsatisfactory. Most of the users mentioned that it depends upon the type of disease and the doctor. It depends on how doctor attends the patient while consulting online. Is doctor listening to patient properly while consulting or not. Others mentioned that physical examination is more satisfactory as it doesn't create the communication gap.
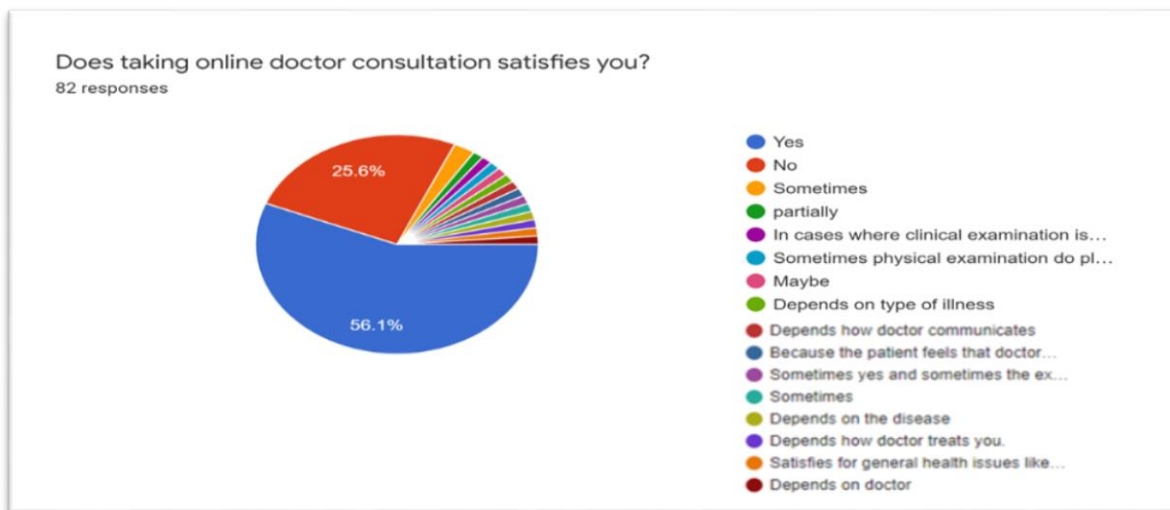
Dig 6.Satisfaction in taking online consultation

• 60% of people stated that using portal provides more benefits than the challenges. But there were 37% of people who find its more challenging than the benefits.
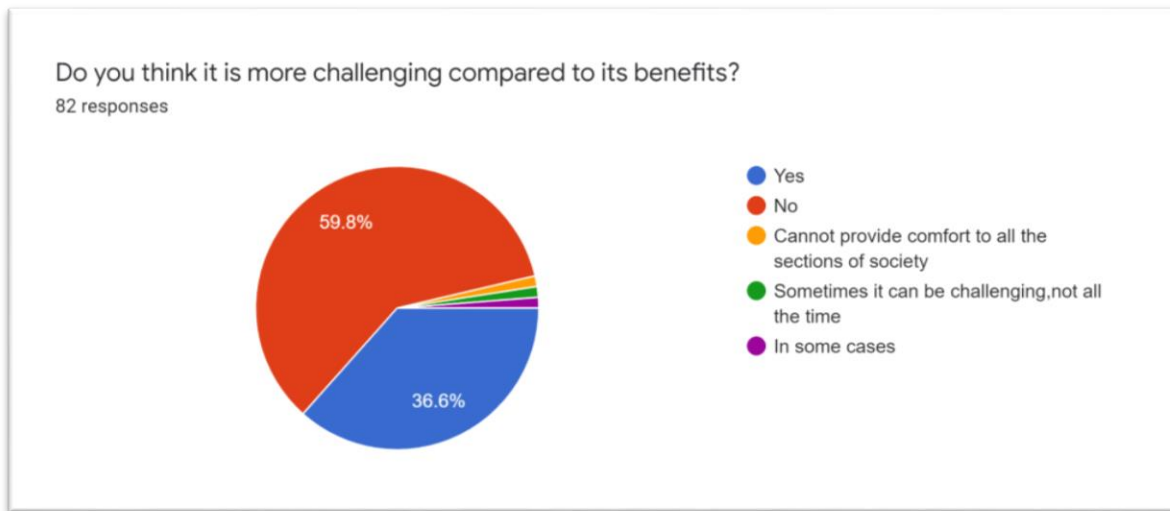
Dig 7. Challenges compared to benefits

• On asking whether users prefer an online consultation or visiting the faculty. There were 65% of people who would prefer an online consultation over visiting the faculty and there were 36 percent of people who prefer visiting the faculty.
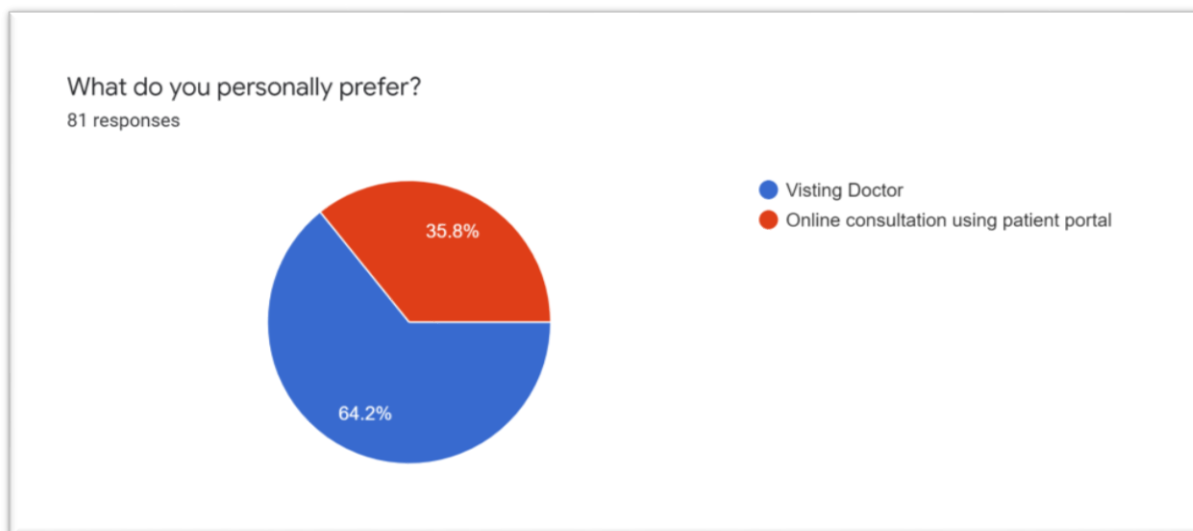
Dig 8. Preferance

•patient portal has helped 69.6% of people as a 24/7 health guide but it wasn't helpful for 30.4% of people.

Dig 9. Health Guide

CHALLENGES FACES BY USERS

•The challenges that users has faced while using the portals were similar to the barriers that are mentioned in the previous studies.
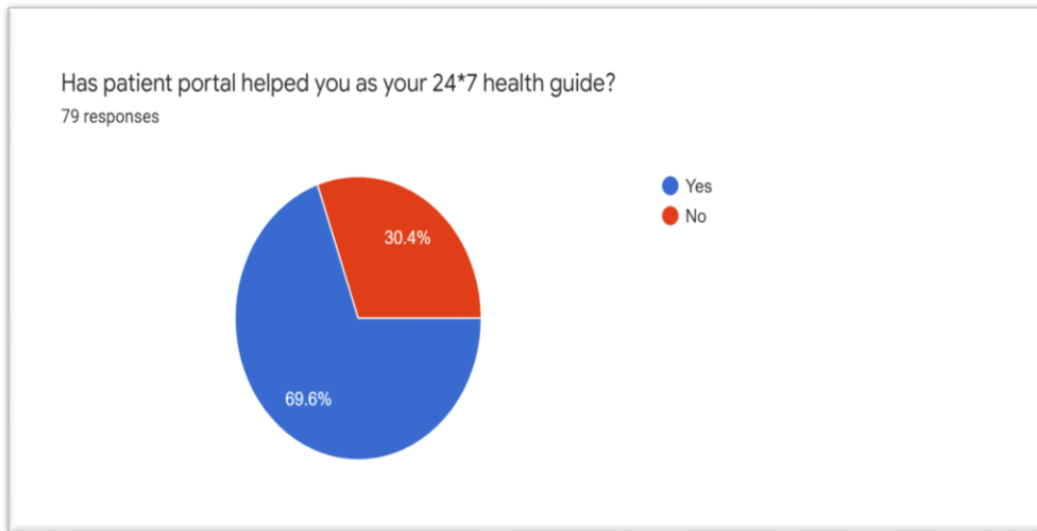
- Complex interface contributed to one of the major barrier with 33.1%.
- Second major barrier that users mentioned was communication gap with 20.4% between the patient and the provider due to the the technical glitches.
- 21.8% of people stated complex medical language is another challenge as it's hard to understand the medical terms for the normal people.
- Fourth challenge that people observed was limited interaction with the provider. (12.7%).
- 12% of people feel that the cost of portals are high but the quality that they provide isnt upto the mark.
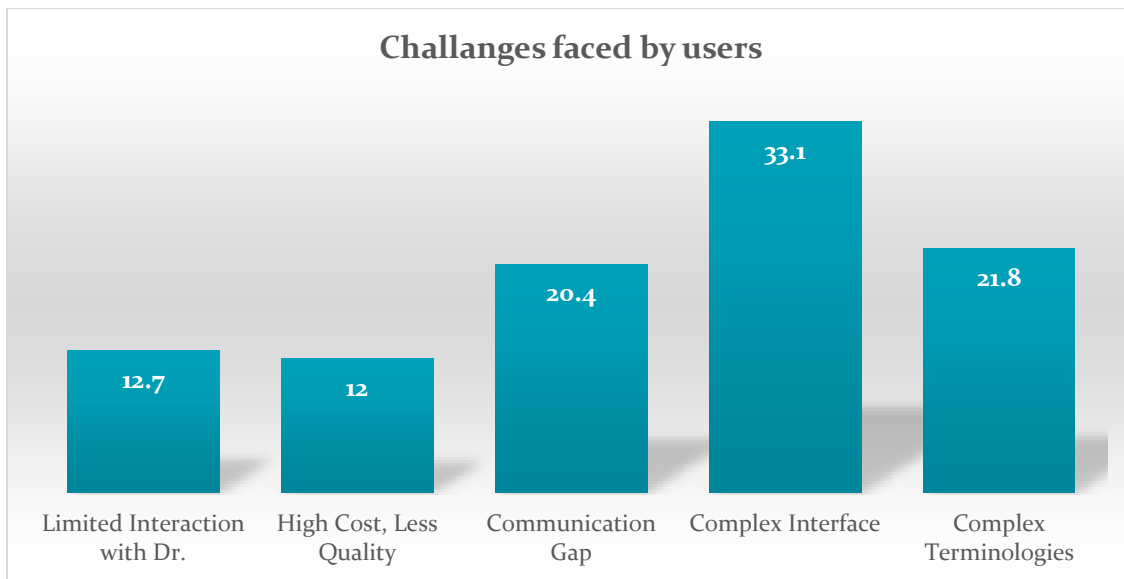
Challanges faced by users

Fig 3.Challenges faces by portal users

FEATURES USERS EXPECT IN A PORTAL

- On asking what are the features users want in the portal, almost 29.5% of the users mentioned that they want user friendly interface. Simple and easy steps in the portal is the major requirement by the users.
- 22.5% of the users require the smartphone accessible feature. As most of the portals are not accessible by Features users want in a portal be handy so that they can fill up the details from anywhere using their devices.
- 16.8 % of people requires the feature of video call with their health care providers so that the communication gap can be reduced.
- There were 13.7 % of people who want to have the additional feature of demo videos on how to use the portals. This can help in train the people in using the portals so that they can feel comfortable with the technology.
- 9.5% of the people want the patient portals to get connected with their wearable devices such as fitness watches.
- 8.5% of the people want to have AI enables chatbot feature in their portals.
- There were lot of features that users gave that can make portal usage even better are mentioned in the following:
    - Video calling Feature with doctor
    - Demo videos
    - User friendly Interface
    - AI chatbots
    - Smartphone accessibility

18

- Integration with smart health devices.

Features users want in portal

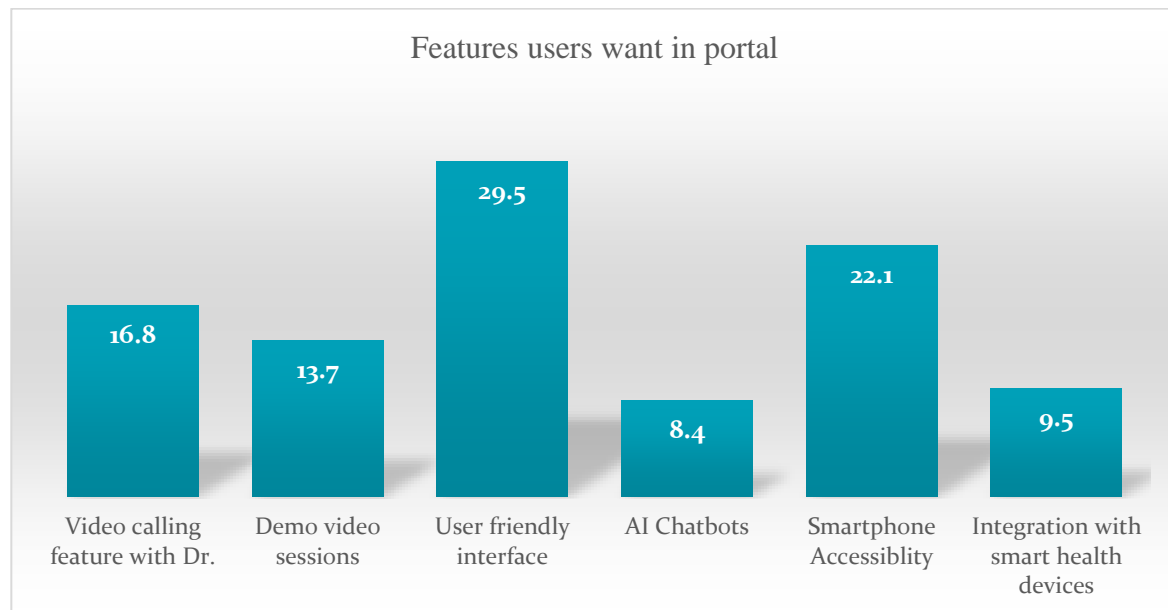|					
16.8	13.7	29.5	8.4	22.1	9.5
Video calling feature with Dr.	Demo video sessions	User friendly interface	AI Chatbots	Smartphone Accessiblity	Integration with smart health devices

Fig 4.Features users want in a portal

RECOMMENDATIONS GIVEN BY USERS

The top most recommendation was simple user friendly and less complex interface. 26.7 percent of the people want the user friendly interface.

The second recommendatiom people suggested was to raise awareness among the people. There were 22.9% of the people who mentioned that people aren't aware of the portals much and that's why there is a need to raise the awareness

- 12.4% of the users mentioned to have the inbuilt feature of tutorial videos for using the portal.
- Around 7 percent of the people want AI supported suggestions and fast search engine.
- Around 5 percent of the people want emergency visit tabs and multilanguage features.
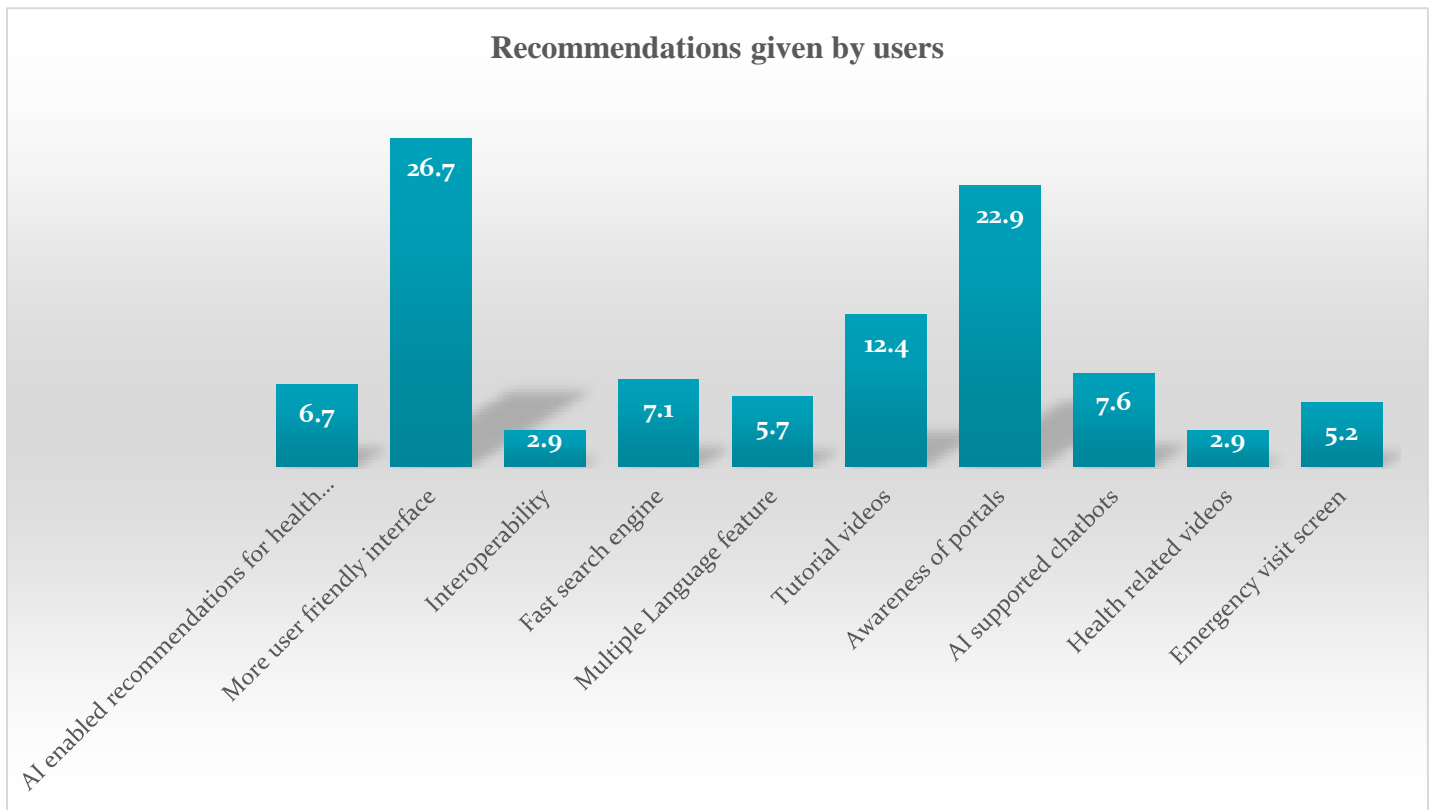
Fig 5.Recommendations given by users

DISCUSSION

The goal of this study was to assess and validate the factors influencing patient portal use satisfaction and its influence on health seeking behavior of the individual and to understand the reasons for enrolling in a patient portal by an individual and patient reported challenges in enrolling and using patient portal.

Barriers

- **Lack of awareness**-One of the major barriers observed while conducting this study was that there are very less people who are aware of the patient portal. The estimated target for collecting this data was 100 but we only able to get 83 responses. Some of the reasons observed behind this are that people never felt the need to use the patient portals or their health care provider never make them aware about the portals.
- **Complex Interface**-When being asked about the challenges faced while using the portals most of them states that the portal interface is not user friendly. People feel that the interface is quite complex to use. It takes lot of time to fill the details as it is really hard to operate it

- **Extra work**-Other reason stated about the challenges faced during the portals was that it is an extra work for the user. Subjects stated that it's kind of a daily duty to look at the portal again and again and sometimes the notifications disturb you. That's why they feel using portal is a burden to their daily activities.
- **Technical glitches**- Some mentioned that communication gets disturbed by technical issues thus makes the communication difficult between the patient and the care provider.
- **Less attention**- Users have complained that it makes difficult for the doctors to give full attention to the patient Thus makes the patient unsatisfied with the consultation
- **High cost less quality**: Few of the users mentioned that the membership is costly compared to the benefits of the portal.

Facilitators

- **Time and cost effective- 60%** of the users see perceived usefulness as a facilitator because the patient portal results in saving time and it is cost effective. Portal use results in fewer consults, less paperwork, higher quality of care, and financial savings. Also, for patients, multiple benefits were listed, including more involvement in their treatment, more transparency, and better accessibility of information. It saves a lot of paperwork and hassles. patients receive so many paper documents that they don't have an overview anymore.
- **Reduce errors:** Booking appointments, consulting doctors and getting digital medical records can help in reducing medical errors. This can be helpful in generating complete and error free medical reports.
- **24 hours health guide-** one can not only consult their health care provider through portal but it acts as a 24 hours health guide for the user where he can get his health updates, Alerts and notifications and can consult the doctor anytime anywhere.
- **No waiting time:** By booking online consultation through portal, patient would get their consultation on time as he doesn't have to visit hospital and wait in the long queue for his turn.
- **Access to number of doctors:** Through online portal consultation one can get access to the doctors of all the specialties. One can consult to his favorite health care provider whether they are present in the facility or not.

Our study found that the most common barriers to patient portal adoption are an individual's preference to speak to a provider in person, not having a need for the patient portal, lack of awareness, complex interface, extra work for the user. These barriers are modifiable and can be intervened upon. Less frequently, patients reported concerns with privacy, internet access, difficulty logging on, and doctor giving less attention. Our study identified that patient who interact with technology are usually motivated to use the portals. The youngsters who are familiar with technology shows no hesitation in using the portals. Another reason that we identified

through this study is that the technology characteristics of the portal is also an important factor in motivating a patient to use the portal. Bad UI, Complex interface, difficulty in navigating through the portal are some of the reasons that is acting as a barrier and is strongly associated with portal satisfaction. For a portal user, his set of expectations of how well it will help with better management of the user's health care. If these expectations are met portal users would likely to be satisfied with the portal. Some studies suggested that patients who are satisfied with their health care providers are most likely to seek and trust information from other sources.

Our study found that a lack of understanding and a confusing interface are barriers to patient portal adoption, which is consistent with earlier research. This study adds to earlier research by showing that this barrier is more widespread than previously anticipated. To illustrate that patient portals are meant to supplement rather than replace in-person interactions with physicians, dissemination tactics that focus information to a specific audience may be required. More implementation studies identifying good techniques for leveraging the patient portal as a means to bolster patient-physician contact during visits are needed, however, to produce better messaging. Collecting and displaying patient-reported outcomes through the portal, as well as using the site to promote advanced care planning talks, are examples of successful implementations. These tactics have shown to be effective.

Lack of awareness, a difficult interface, and a lack of need for a patient portal were seen as barriers to adoption by over half of the participants in our survey, which has been identified as a barrier in previous research. Real-life patient tales that highlight how a patient portal might be used to make the case for why a patient portal might be beneficial were recommended in a previous study. There is also a need for additional usability testing of patient portals and the application of user-centered design methodologies to better determine what features inside the patient portal would be useful to patients.

A number of usability concerns have been observed in studies, including the lack of information offered in many languages, educational resources, inadequate data visualization and lack of context for laboratory values and personalization. As a result, some systems have experimented with innovative strategies, such as providing tailored patient education, as well as motivational strategies (e.g., social comparisons and gamification) to improve the relevance of the patient portal and ensure that it meets user needs, resulting in patient satisfaction.

CONCLUSION

Future research is needed to examine ways for aligning the patient portal with the information demands of patients. Some systems have also trained physicians on the portal and included time into clinic workflow to explain patients what it is and how to utilize it, and these measures may improve patients' perceptions of the portal's importance. More testing is needed to evaluate if this is a viable implementation strategy. Several studies have looked at techniques like having health

care systems conduct patient portal demonstrations as a way to boost patient comfort with the portal and ultimately adoption.

Portal satisfaction is one of the key elements impacting portal use. As our results shows the fact that the major challenge faced by the users was complex and bad User interface. Moreover, Simple user interface with more features is one of the most wanted feature that the users want. That's why there is a need that IT developers should focus on building easy-to-use technology features as a technique of ensuring satisfaction. As a result, we may conclude that portal satisfaction has a significant impact on an individual's health-seeking behavior.

LIMITATIONS

The limitation of this study is that the data collected was very small. We could only be able to collect 83 responses because most of the people are not aware of what patient portals are and that is the major drawback that has been faced while conducting this study. Other drawback that we observed is that by collecting data online, we couldn't involve the elderly people data as they do not use technology much hence aren't aware of the portals.

RECOMMENDATIONS

- To encourage patient portal use among patients and providers, the government should take some steps to promote patient portal
- Under the Promoting Interoperability for Hospitals Program, eligible hospitals must also ensure that patients can download and access health information. In order to improve a patient's ability to maintain a longitudinal health record (i.e., combine portal data from various providers) and share the record with other health care providers, physicians should also enable access to patient portals through digital health applications.
- Patient portals should also be accessible via smartphone apps, according to health-care organizations. Patients who may not have access to a home computer may benefit from smartphone app access since it allows them to combine data from numerous patient portals.
- IT developers must focus on developing easy-to-use technology features and easy language as a method for designing portals and ensuring satisfaction.

- Health care providers should also make sure to provide proper attention to the patient so that the communication gap can be reduced.

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