



Medical professional's perspective on Web based Personal Health record in India

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Abstract

To conduct a detailed evaluation of a web based personal health record from the medical professional's point of view. This study was conducted in Jaipur, the capital of Rajasthan state in India. Study group consisted of 30 doctors. Majority of the participants were specialists in various fields of medical and surgical branches working in hospitals and a medical college. Participants were approached and solicited based on certain inclusion and exclusion criteria and were asked to evaluate the Google Health and fill the appropriate questionnaires. A descriptive statistical approach was used for the analysis of data collected in this research. Participants voiced their concerns regarding the 'Privacy', 'Security' and 'Trust' related issues as well as the issues related to 'computer literacy' and 'Internet access' but overall all of the participants were very much satisfied with the usefulness of the PHR used in the study. Personal Health Records can prove to be very important tool in delivering quality healthcare in India. As the supporting evidence of specific benefits for PHR adoption in Indian users is virtually nonexistent, further research is needed in this domain and which should include all the stakeholders including patients as well as other healthcare professionals.

Keywords: Personal health records, web based personal health records, doctors, electronic personal health records, Physicians.

Introduction

A patient's medical data is derived from a variety of sources including doctors and pharmacist visits, relatives and friends as key informants and various government and private agencies involved in healthcare management. This data is generated, retained and required in many different situations and at many different times and places throughout his/her lifetime and needs to be stored in the medical records which are essentially a chronology of a patients' medical history¹.

Medical record can be in paper format or electronic format. Paper based medical record has traditionally served this purpose for ages, but there are several drawback of paper records such as having geographical limitation, can be used by a single user at a time, do not support multiple form of data, storage problems, no automatic validation of data, being illegible etc. For this reason, now over the past several years, there has been a tremendous increase of activities in promoting the use of digital records at various levels by governments of different countries and private organisations.

Personal health record as a concept is still evolving over several years. As defined by Markle Foundation's Connecting for Health collaborative, a Personal Health Record is an electronic application which helps individuals in accessing, managing and sharing their health information as well as of their relatives in a private, secure and confidential environment².

PHR enables patients to track their physician visits, medications, and laboratory values online in a pleasant and informative learning environment³. Personal Health Records contain information entered by the users and are managed individually by them, thus having full control of their own medical record.

Personal health records include tools to help individuals take a more active role in their own health⁴. PHR encourages communication between the individual and the caregivers⁵. It is very much likely that maintaining a PHR may have a positive effect on patient health⁶.

Although Personal Health Records are prepared by the developers keeping in mind the patients, a PHR can be more useful if the developers understand the importance of incorporating and maintaining features and flow of health related information according to the need of health care professionals also because PHR can be a very useful source of information to them. At present there appears to be a scarcity of research related to practicing physicians' views of PHRs⁷.

Electronic Personal health record is a totally new concept in India at the time of this study and it was felt that there should be a study which takes into account values and features that Indian doctors place on the components of PHR's or think should be present in any useful PHR, as this knowledge could help in creating or improving an existing Personal Health Record.

Subjects and Methods: Aims and Objectives: The main aim of this study was to conduct an independent, detailed evaluation of an existing web based personal health record from the medical professional's point of view and to contribute to the present knowledge base in this domain.

The aim and objective of this project were planned to be met through the performance of the following activities. i. Selection of participants meeting the inclusion criteria. ii. Observing and analyzing data. iii. Producing Results and recommendations.

Material and Methods

Google Health is a product of Google, which allows its users to initiate and maintain their personal healthcare record. Data which can be entered by users include demographic data, diseases and symptoms, drugs, allergies, investigation, test results and immunizations history.

In addition, Google PHR also allow its users to i. Import their medical records from other sources and track their medical history. ii. Find out how medications might interact. iii. Share medical records. Upload Files and Images. iv. Graphing Test Results, v. Print wallet card and more.

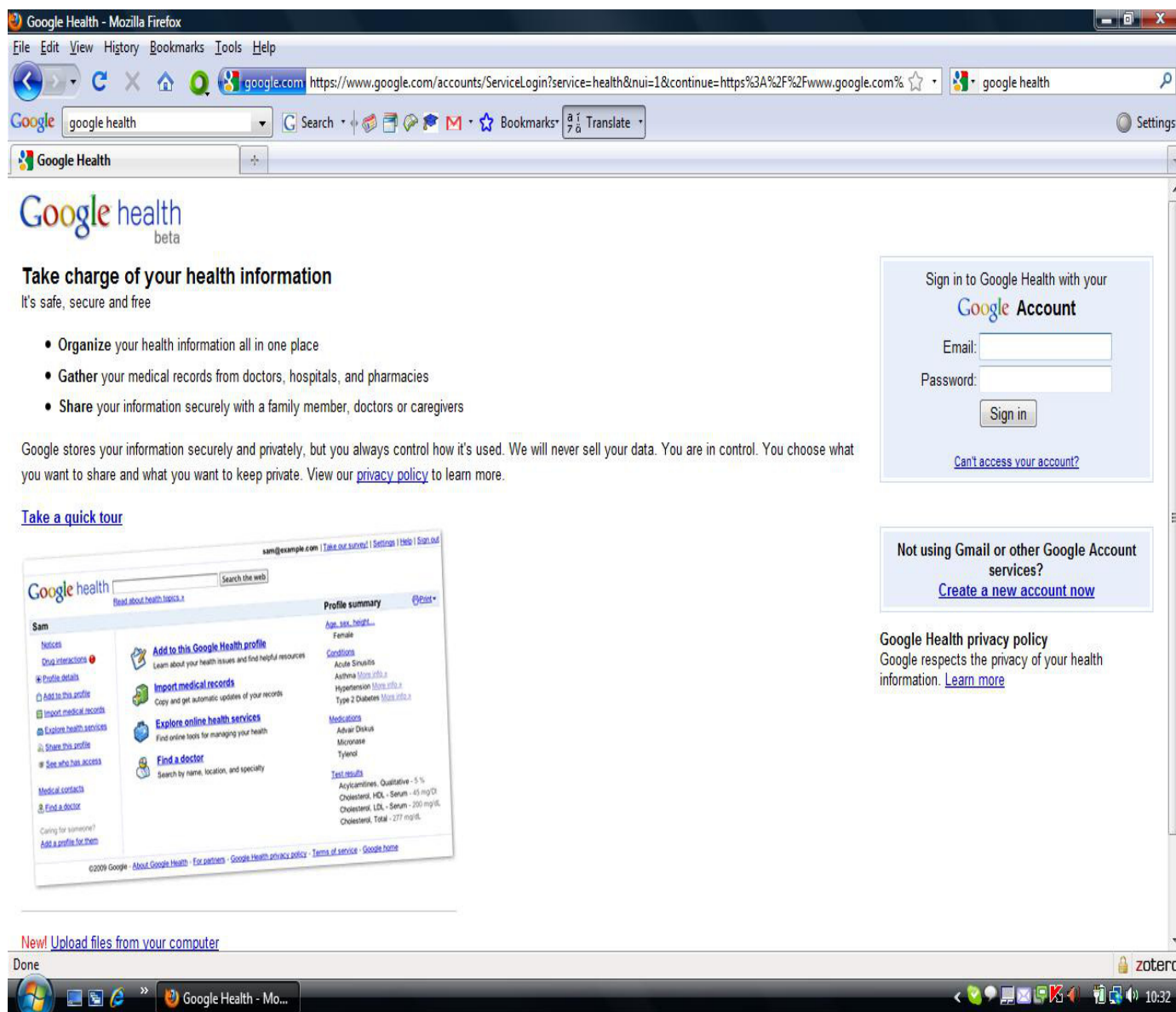


Figure-1
Homepage of Google Health

Participants: This study was conducted in Jaipur city, the capital of Rajasthan state in India. Study group consisted of 30 doctors, majority of whom were specialist in various fields of medicine and surgery, while some of them were General physician.

The following were the inclusion and exclusion criteria for this study.

Inclusion criteria: i. Participants should be a doctor. ii. Participants should be a current user of internet and currently using an online tool to manage their personal life (e.g. Use medical websites for professional enhancement, manage bank accounts, online bill payment etc.).

Exclusion criteria: Any form of assistance required in using internet or computers, for example in cases of Visual impairment.

Study design (Operational procedure): For this purpose doctors working in hospitals and a private medical college in Jaipur were approached and those doctors who were ready to participate in the study were solicited.

The study included the following steps. i. Gain users’ consent, ii. Introductory information provided to the participant regarding the aim and objectives of the study. iii. Complete pre-questionnaire: Each participant was given a pre-questionnaire to complete in order to gather basic personal information about him or her. iv. Explore the Personal Health record: Each participant was then provided with a unique test account to log in into the Google Health home page. The participants were asked to fill a fictional health profile and were encouraged to explore all the prominent features of Google health Personal Health Record. They were asked to “think aloud”, or describe their thoughts while evaluating the various sections of PHR. After they had finished exploring and adding the patient related data in PHR, participants gave additional feedback about their experience, whether they found the features in this particular PHR to be valuable or useful and what could be improved keeping in mind the patients. In the end, each participant was asked to rate the PHR application. v. Observe and record users’ interaction with the system: User interaction with the website was observed and important points were noted for later discussion, especially when they performed anything unexpected, and appeared to be confused or having difficulties.

Instruments of the study: Overall preference Questionnaire: Participants were asked to rate the Google Health across the 5 dimensions using a 6 point Likert scale. The five dimensions across which the participants had to rate the Personal Health Record were adapted from the UserCentric study by Kirsten Peters et al (2009)⁸ and were as follows: i. Ease of Use, ii. Utility /Usefulness, iii. Security, iv. Privacy, v. Trust.

The answers to this question were grouped into the following 6 Likert scale response: Extremely satisfied = 6, Very satisfied = 5, Somewhat satisfied = 4, Somewhat dissatisfied = 3, Very dissatisfied = 2, Extremely dissatisfied = 1.

Results and Discussion

Descriptive Statistics: a descriptive statistical approach was used for the analysis of the data collected in this research as it helps in summarising the data as well as determining the underlying trends and relationships that exist between the data.

Table-1

Distribution of respondents according to their gender

Gender	No. of Respondents	Percentage
Male	19	63
Female	11	37
Total	30	100

Table-2

Distribution of participants according to their age

Age Group	No. of Respondents	Percentage
21-40	18	60
41-60	9	30
60 and above	3	10
Total	30	100

Table-3

Distribution of participants according to their Qualification

Qualification	No of Participants	Percentage
MBBS	7	33
Post-graduation (M.D/M.S/PG Dip)	23	77
Total	30	100

Table-4

Frequency of internet access

Internet access	No of Participants	Percentage
Occasionally	2	6.67
2 -4 days a week	16	53.3
Everyday	12	40
Total	30	100

Table-5

Time spent on a computer using internet per week

Internet use duration	Number of Participants	Percentage
Less than 1 hour	1	3.3
1 – 5 hours	9	30
More than 5 hours	20	66.7
Total	30	100

Table-6
Knowledge of Personal Health Records

Knowledge of PHR	Number of Participants	Percentage
Yes	7	33.3
No	23	66.7
Total	30	100

Knowledge of Personal Health Record

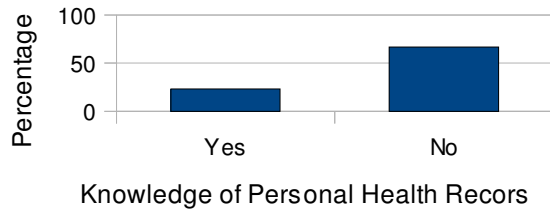


Figure-1
Verbal and Observational data

Ease of Use dimension.

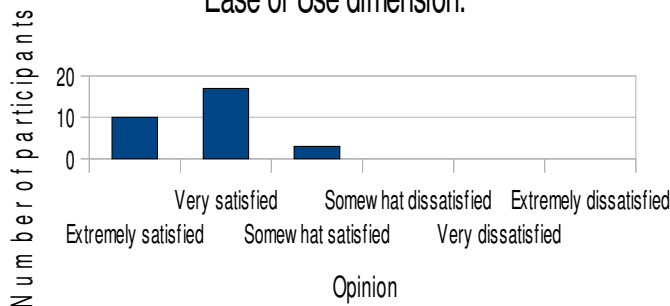


Figure-2
Participants rating on Ease of Use dimension

Utility / Usefulness dimension

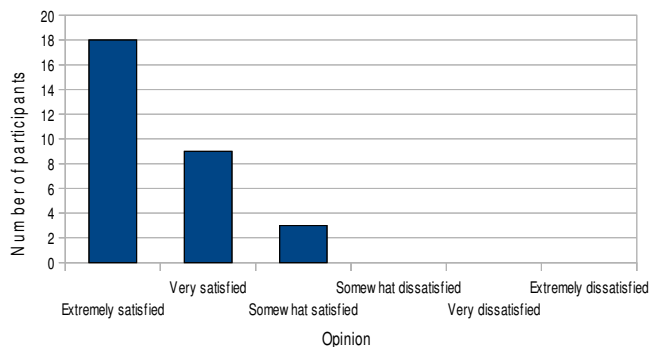


Figure – 3
Participants rating on Utility / Usefulness dimension

Security

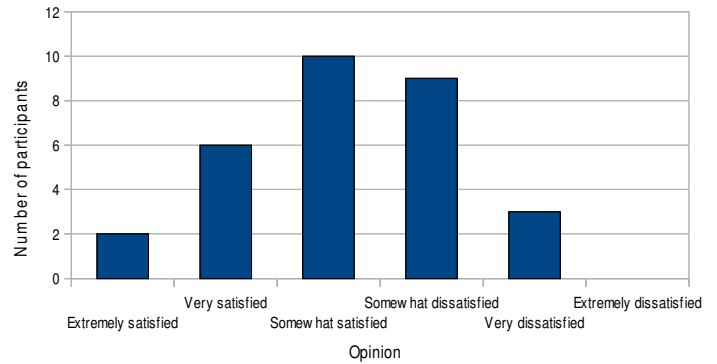


Figure – 4
Participants rating on Security dimension

Trust

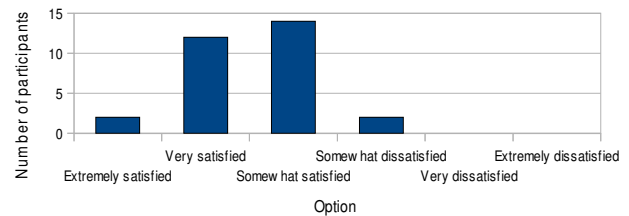


Figure – 5
Participants rating on Privacy dimension

Privacy

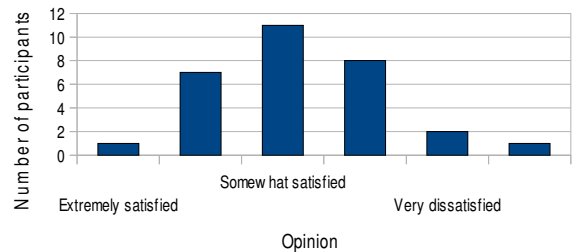


Figure – 6
Participants rating on Trust Dimension

Participants rating of Overall Google Health

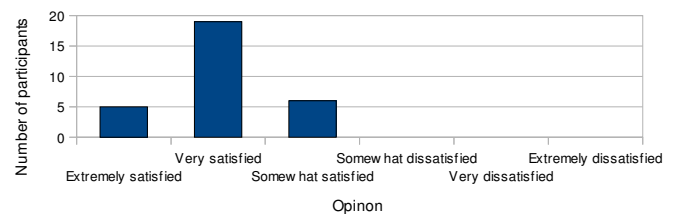


Figure – 7
Participants rating of Google Health Overall

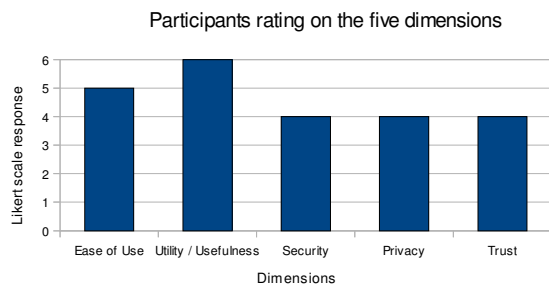


Figure – 8
Participants rating on the five dimensions

Discussion: Personal health record (PHR) has been considered to be a very important tool in mediating patient centric care, but the question that, is it really useful for patients has received little attention⁶. Current state-of-the-art for personal health records is at best characterized as ‘beta releases’ and till date, they have not had the benefit of thousands of users¹. Awareness regarding a PHR is virtually nonexistent in India and the same holds true for patients as well as doctors. In our study, only 33% participants reported that they have some knowledge of PHR and its uses. Somewhat similar findings were also reported by Fuji et al in their study who found that nearly 25 % of the physicians were unaware of PHR as an entity⁹. In another similar study, the author noticed that healthcare professionals are relatively unfamiliar with Personal health records and its usefulness as a tool for patients⁷.

According to one study regarding trustworthiness of a PHR, the author concluded that it is really unfortunate if PHRs were relegated to low level of trust, although it is not possible to completely prevent the fraudulent falsification of records, but at least this can be made more difficult¹⁰. In this study also, while exploring the data entry section, few of the participants raised doubts regarding the authenticity and validity of data entered by the user and commented that there should be a mechanism to authenticate and validate the information entered by a patient.

Issues of confidentiality and abuse of data are very important reasons given by health care providers who oppose the coordination of medical databases despite the potential benefits¹¹. Majority of participants in this study also raised their concerns regarding these two very important issues stating that it is very easy for anyone to exploit, use or tamper the data entered by a patient if he or she knows the password to log in the website.

Physicians usually try to avoid communicating with patients and when patients try to ask questions about different treatment options, they react defensively¹². On the same note, few physician in this study also mentioned that, they fear, their work burden may increase if patients start using this PHR and then start asking many related and unrelated question because of having access to medical information from different source in one place.

In earlier studies it was reported that physician are not in favor of giving patients access to their healthcare records¹³. Although physicians admits that PHR can be useful for different patient groups, according to them several important issues like low levels of patient computer and health literacy, low levels of patient motivation, and interoperability issues may prove to be a major barrier in its rapid adoption⁷. In this study also although participants were overall very satisfied with the functionality of Google PHR, but still raised their doubts regarding all the above mentioned issues. In view of all of these participants, keeping in mind the computer competency of average Indian user, internet accessibility, healthcare literacy level among Indian patients and also the degree of motivation in governmental agencies promoting healthcare, we are not ready yet for an Internet web based PHR and it may take few more years, before this or any other Personal Health Record could receive a warm welcome by the Indian users.

In this study, perception of Indian doctors seems to be very much different from the finding of Matthew et al⁷ who concluded that physician’s negative view regarding the usefulness of PHRs may restrict widespread support of PHR use. According to majority of Indian doctor participating in the study, engaging patient in managing their health may lead to improved healthcare in terms of prevention, early diagnosis and management and overall well being.” In our study, all participants reported that they can notice a great change in their attitude towards the concept of Personal Health Records they had earlier before this study and commented that if Indian patient start using this PHR quality of healthcare services provided by them will improve for sure.

To conclude, as mentioned by Dean F. Sittig¹ in their study that “web-based, personal health records can dramatically influence the delivery of health care in the 21st Century”, it is very much evident PHR can definitely help in improving the quality of healthcare delivered but more research is needed to recognize the mental models of healthcare providers as well as the patients with respect to Personal Health Records. Data privacy, security and trust, validation of data are some of the core issues which should be investigated in detail among Indian users, as Personal Health Records are undoubtedly going to stay for long and sooner or later will prove to be a major breakthrough in delivering quality healthcare in India.

Conclusion

Enormous investment is currently being made into PHRs and they are still evolving with the advancing technology. This will be an ongoing process for long time to come but on the basis of this study, it can be said undoubtedly that, in today's world Personal Health Record do hold considerable promise in improving care delivery and the patient-centeredness of medical care.

All the major stake holders including doctors, healthcare providers, policy makers, patients as well as their relatives should be educated regarding the benefits of PHRs. Since the supporting evidence of specific benefits for PHR adoption in Indian users is virtually nonexistent, further extensive research is needed in this domain.

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