



Integrating mobile health with curative health: Chemists perspective

Sanjay Kumar¹

¹ Research Scholar, Department of Management, Kalinga University, Naya Raipur, Chhattisgarh, India

Abstract

Healthcare Management at recipients' level has great opportunity for improvement and its development compared to the other sectors of India is limited. The impartial of this study is to understand the need of m-health and its implantation challenges and bottlenecks in India. I had measured Chemist to understand their view, need, reception and readiness for m-health through a multiple organized questionnaire including 1) need of m-health towards patients, 2) support by Government for m-health, 3) Willingness of speculation from patient towards the cost in the field, 4) issues related educational problems for the operation of mHealth, 5) Policies in language and availability & understanding of infrastructure along with scope of expansion. The respondents answered affirmatively in these quantities where 100 % agreed on the fact the m-health is the need of the hour. The survey has also emphasized the operational problems of m-health application in India due to its wide variety of demographic, social and instructive, economic resources, long term guidelines around that.

Keywords: healthcare, m-health, patients

Introduction

The mobile use in health sector in the developing world is rapidly expanding to include severe and contagious diseases. M Health and other technologies such as wireless system can be useful to address the challenges of health sector. According to Ian Leslie Freng, Simon Sherrington and Danny Dicks (2011) "M-health is an application that involves voice or data communication for health purposes between a central point and remote locations, which includes eHealth applications (if delivery over a mobile network adds utility to the application), the use of mobile phones and other devices as platforms for local health-related purposes as long as there is some use of a network." India ranks second among developing countries in the adoption of m Health. An abbreviation for mobile health, m-health is an increasing and expanding phenomenon in India's health sector. In the age of artificial intelligence, m health has emerged as a sub-sector of e health, which is used for the practice of medicine and public health supported by mobile communication devices. Generally, M-health is used for denoting the use of mobile devices, tablets, computers, smart watches and other wearable devices for health services. India has moved far ahead in health sector following the Millennium Development Goals. The area of M-health is universal in nature for delivering health care from the most developed to the least developed economies of the world. The use of mobile technology in health sector in the developing world is rapidly expanding to include chronic, and communicable diseases. Technology like m-health can be useful to address the challenges of health sector in the developing countries like India. "M-health is a service or application that involves voice or data communication for health purposes between a central point and remote locations. M-Health is consumer focused because almost all customer uses mobile and they can manage their health through this.

One of the key stakeholder is Doctor who is diagnosing the patient on day to day basis and I met these doctors and consolidated their opinion and their awareness, acceptability, efficiency and effectiveness of the m-health based systems in health services. The paper attempts to analyze the role of different stakeholders and make a suggestion for the improvement of health service delivery.

The number of mobile user is increasing day by day in all over the world. On the other side, most of the mobile users do not have knowledge about its health applications. The present situation is worse in the developing and the undeveloped countries because of the lack of proper education. The other side of coin is positive in the developing countries. Increased adoption of mobile technology or m Health is supposed to be essential by more than half of doctors and healthcare providers in developed and emerging markets around the world including 60% in India. At this time, m Health applications in the maternal and newborn health field are in the formative stage, but rapidly evolving. The United Nations Foundation in its studies entitled "m Health for Development: The Opportunity of Mobile Technology for Healthcare in the Developing" has shown the immense potential of mobile technology in the developing countries like India. William C. Philbrick has published his report entitled "m Health and MNCH: State of the Evidence Trends, Gaps, Stakeholder Needs, and Opportunities for Future Research on the Use of Mobile Technology to Improve Maternal, Newborn, and Child Health" in 2013 showing problem in mission and strategy of the current mHealth projects.

Research methodology

A detailed survey questionnaires was used to collect data. Data was collected on various data variables such as Mobile Health uses, missed does and prescription, key challenges,

solutions and Geographic Location. Data collection was done using automated data capture software on smart phone Data Collection

Data was collected on Coolpad Android using Comm Care mobile application software, which facilitates online data collection.

Study limitations

There are few limitations of the survey and should be considered at the time of interpretation of results:

- Non-Response Bias: Survey findings are based on available data.
- Interview Bias: Respondents self-reported actions related to smart phone, Patient load experience, which were not confirmed by further document review.
- Through an online software comm Care. The survey tool was uploaded on software and downloaded on phone. Data was sent to the online database server by cellular, Wi Fi, or cable internet connection from the mobile device.

Manual for data collection

- Field guide/manual was prepared before the field start and keep updating the manuals on the learning obtained from field.

Key challenges during data collection

There are few challenges while conducting the survey that includes

- The physical in-convenience of transport
- The doctors or Chemist most of the time were apprehensive in sharing the information
- Due to non- availability and prior commitment, needed to conducts many revisits.
- Many times the respondent denied for conducting the interview.
- Many time the respondent was not present at the location and I have wait for him untile he comes because he or she was being the important stakeholders.
- Even sometimes the interview with them things was not smooth. In the beginning, the respondents did not co-operate properly and created problem. But we managed to established close rapport with the respondents and eventually succeeded in knowing their views and attitudes in depth.
- The interview schedule was the main tool used for collecting primary data, supplemented by field notes based on observation. Although some structured questions were included to get specific background data. The quantitative data collected through interviews was supplemented and cross-checked by qualitative data obtained though observation. Contacting the respondents and visiting their households posed serious problems.

Setting up field

Gujarat a Western Indian state covering 75,685 sq mi and its population is 60 million. The State encompasses of 33 districts and the State is doing well in Health parameters. A comparative study indicate that the State has 12th ranking on health indicator performance and lagging behind from many

states including Kerala, Goa, Himachal, Punjab, Tamil Nadu, Maharashtra and Haryana.

Table 1

Row Labels	Count of Do you have a phone?
Yes	25
No	0
Grand Total	25

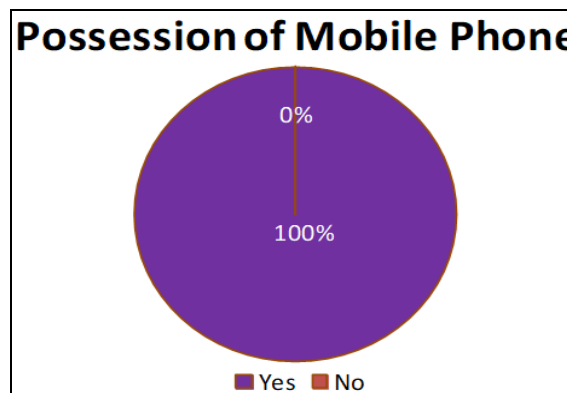


Fig 1

Telephone and specially mobile phone has now become an integral part of our life and that becomes more important where it is to be utilized for business purpose. It was found that 100% of the chemists were in possession of and using mobile phone. Chemists play a very important role in the value chain of any health care transaction model and in fact have the capability of being an influence in dissemination of services related to health, thus elevating the status of chemists from being mere transactional only to transformational also where they have the capability to effect the decision of the customer in any of the medical care delivery models.

Table 2

Row Labels	Count of If Yes Smart Phone or basic phone?
Yes	25
No	0
Grand Total	25

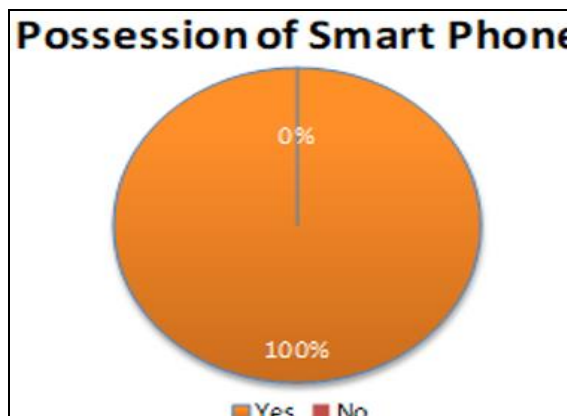


Fig 2

Further in our study it was also noticed that 100% of the chemist are using smart phones which indicates that they may

not be struggling with the technological aspect and will be able to understand the intricacy of M-Health applications.

Table 3

Row Labels	Count of	Are you using any online applications (E-Health 2, E-education 3, Banking 4, Social Media 5, Other)
Yes		25
No		0
Grand Total		25

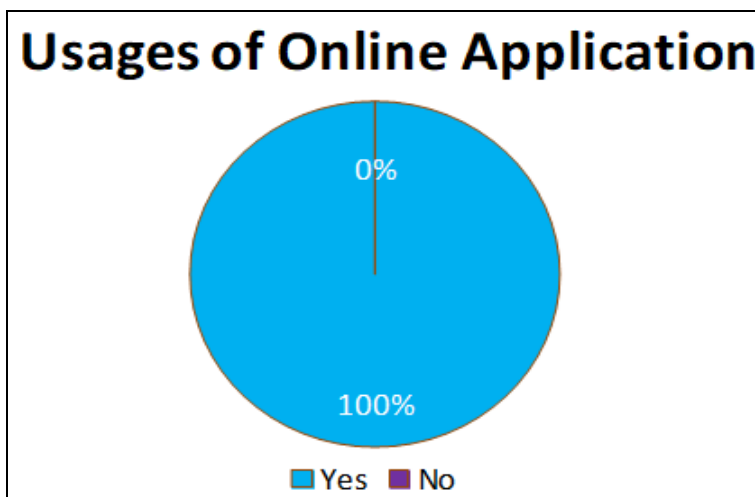


Fig 3

For any business partner and chemist is particular, It is a natural corollary to probe on the usage of any on line application on their smart phones. The information provided

indicates that 100% of the chemists are hooked to the usage of any kind of online application related to either E-Health, E-Education, Banking, Social media, or any other.

Table 4

Row Labels	Count of	Does patent missed percribed dose frequently
Yes		17
No		8
Grand Total		25

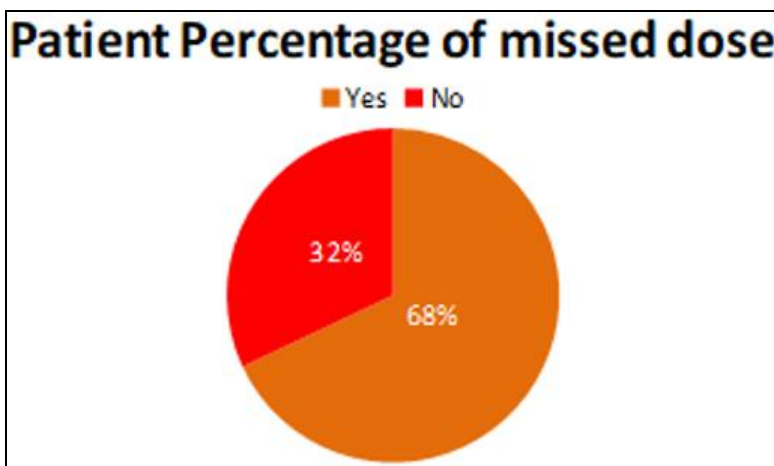


Fig 4

It was also noticed that 68% of the chemist were saying that patients had a tendency to forget the medicine management

schedule thus breaking the scheduled dosage cycle.

Table 5

Row Labels	Count of Does patient/Care taker lost their last prescription slips while coming to followup visist
No	21
Yes	4
Grand Total	25

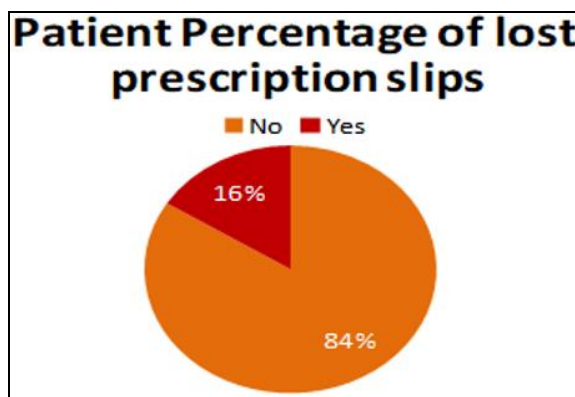


Fig 5

The medicine management pattern followed by patients is showing a unique trend here which is reflected in the study data of chemists where 84% of chemist says that the patients generally do not miss their prescription slips and keep it safely.

It is interesting to note here that although 68% of chemists are saying that the patients have the tendency of missing their

scheduled doses but 84% of the chemist again point out that they do not miss their prescription slips and carry their old prescription slips is their subsequent follow up visits.

This data points out that the doses are missed by patients for lack any alarm or reminding system and here M-Health application may come handy is mitigating this problem of missing dose.

Table 6

Row Labels	Count of Do you think mobile Health Application would help them to recover faster and improve the patent health?
No	2
Yes	23
Grand Total	25

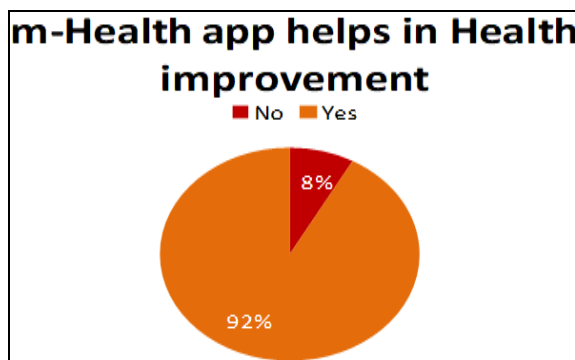


Fig 6

In view of the above problem the chemist were asked if the M-Health application is implemented, will it help the patients

in fast recovery thus improving their health to which 92% of chemists replied in affirmative that it is going to help.

Table 7

Row Labels	Count of Do you think this type of application is advisable to patient along with other medicines?
Yes	25
No	0
Grand Total	25

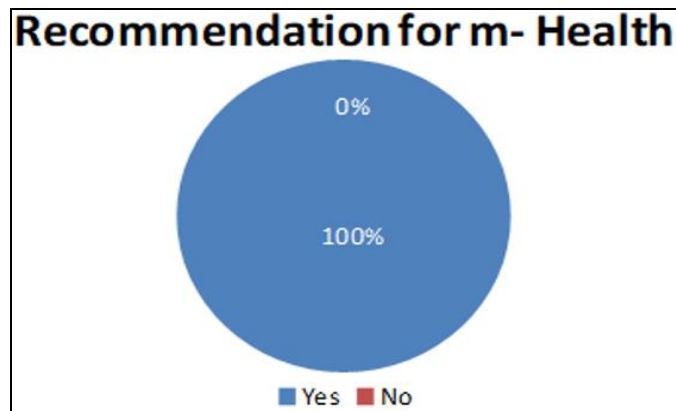


Fig 7

100% of the chemists felt that M-Health application should also be prescribed to patients along with other medicines.

Table 8

Row Labels	Count of Would patient/care taker pay for such application?
No	25
Yes	0
Grand Total	25

Although 100% of chemist advocated for prescribing this application along with the medicines but again 100% of the chemists said that they do not think that the patients or their caretaker may be willing to pay for this application from their pocket

Table 9

Key Challenges	Implementation Key Challenge indicated by Doctors	Percentage
Cost of application	20	16
Lack of Access	25	20
Lack of evidence	10	8
Lack of Knowledge	20	16
Limited Infrastructure	18	14
Limited Policy Support	8	6
Privacy and Security	7	6
Reliability	17	14
Grand Total	125	

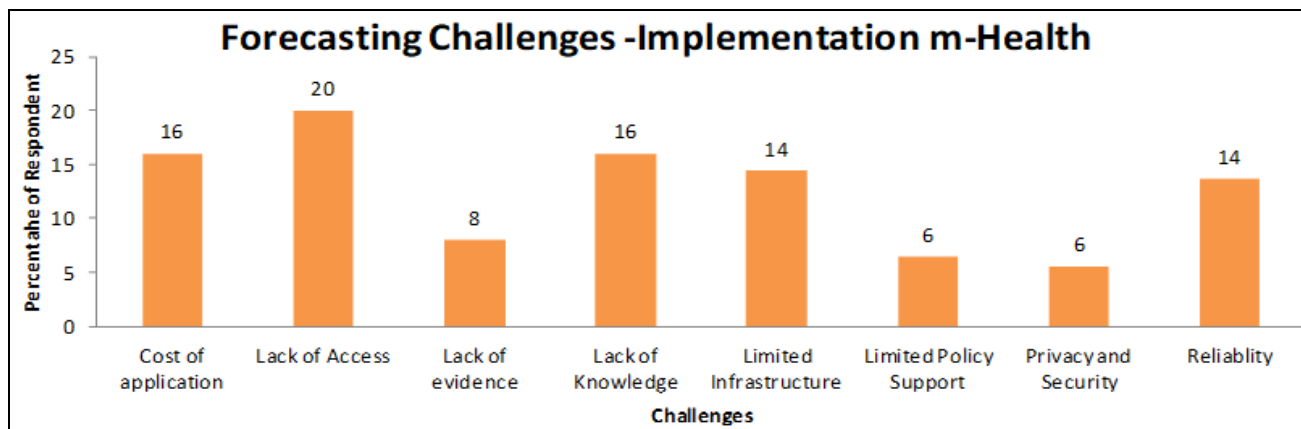


Fig 8

On the face of it is being inferred from survey of chemists that implementation of M-Health application will improve the health scenario but the challenges are many in its implementation. Amongst the many challenges is listed like Cost of application, lack of access, lack of evidence, lack of knowledge, limited infrastructure, limited policy support, privacy and security, reliability.

Lack of access emerged as top most challenge with 20% of chemists, followed by lack of knowledge and cost of application by 16% of the chemists. Privacy and security and limited policy support ranked lowest with only 6% chemists thinking that this will pose a challenge.

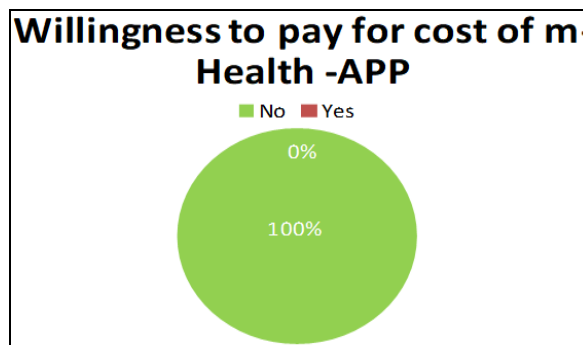


Fig 9

Table 10

Key Solutions	Sum of Number	Percentage
Awarness Camps	10	8
Chemist should Install the application	19	15
Data Security	20	16
Free of cost application	18	14
Government Policy	19	15
Mandatory for all Doctors to perscribe	15	12
Setting up Infrastructure	8	6
To take Internet connectivity to Deep pockets of country	20	16
Grand Total	129	

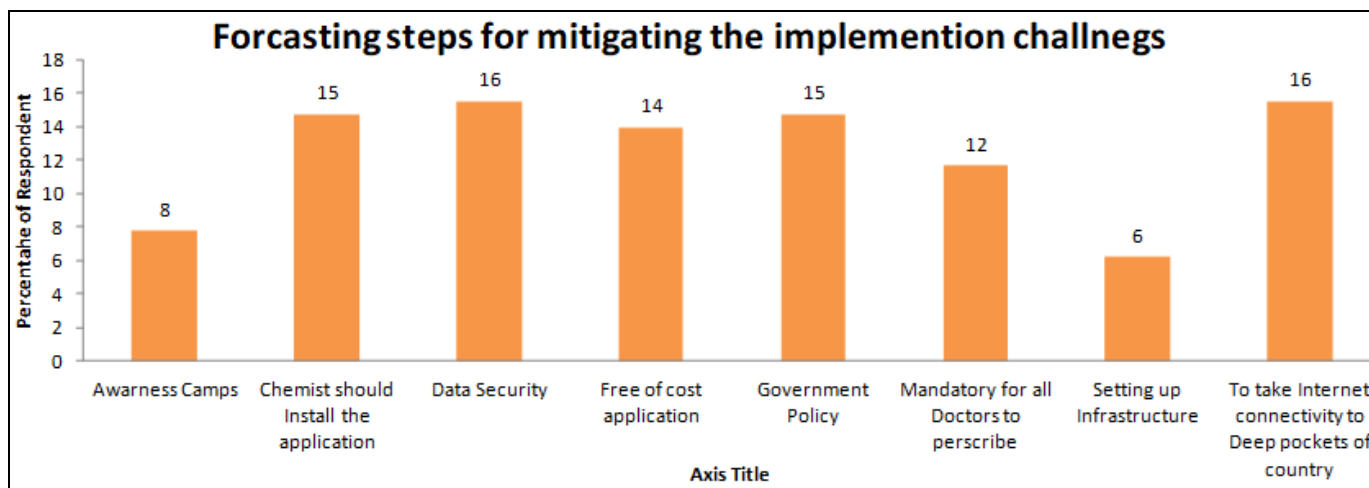


Fig 10

Similarly on front of the challenge mitigation data security and taking internal connectivity to deep pockets of country emerged on top with 16% of chemists saying that this is important. Second ranking came for the following steps i.e chemists installing the application and government polices with 15% of the chemists vouching for it. Apart from it, cost of application, making it mandatory for doctors, awareness camps and setting up of infrastructure also had some percentage of chemists recommending for it.

Table 11

Row Labels	Count of Medium of Communication
Regional Language	20
Hindi	1
English	4
Grand Total	25

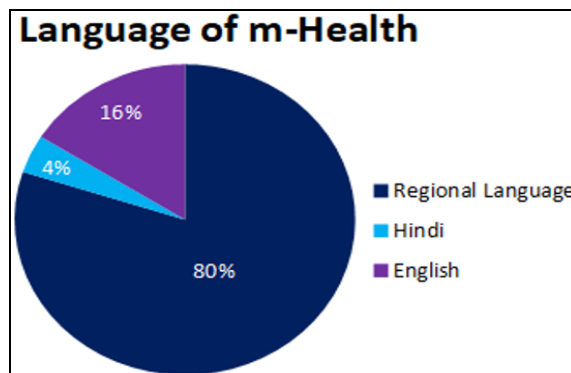


Fig 11

M-health application if implemented should be in regional language only and this was said by 80% of the chemists. A small amount of 16% and 4% asked for English and Hindi also.

Table 12

Row Labels	Count of Respondent Technology Savvy
1	1
2	2
3	1
4	3
5	18
Grand Total	25

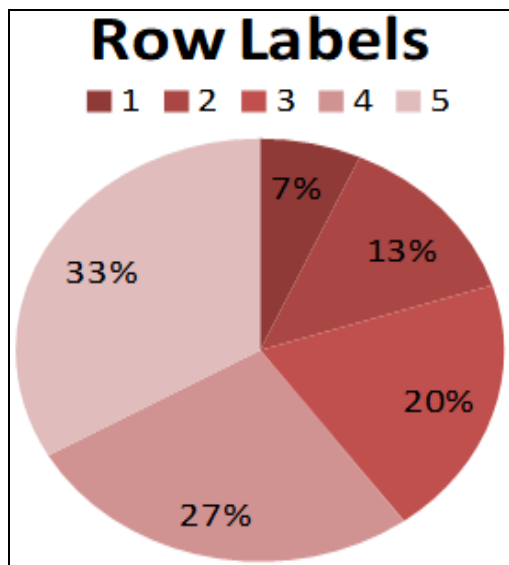


Fig 12

Conclusion

Chemists are one of the key enablers in any public health programme. In a country like India with moderate literacy level chemist play the role of friend, philosopher and guide also to the patents and their observations are important in the implementation of M-Health programme.

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