



**A STUDY OF SERVICE PROVIDERS' PERSPECTIVE TOWARDS
TELEMEDICINE IN PUNJAB**

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ABSTRACT

Telemedicine has emerged as a new mean of communication for patients residing in rural and remote area to get consultation from super specialist doctor through videoconferencing. Government has opened various telemedicine centres to provide healthcare services to rural population of Punjab. Efforts have been made to make telemedicine as alternative model of healthcare but it has not gain so much popularity among the practitioners. The present research work aims to study the perspective of service providers of telemedicine services in government hospital about the issues rest related various facilities being provided in the telemedicine centres. The study is based upon survey on 25 telemedicine centres of Punjab and data was collected through semi structured questionnaire. The study highlighted significant factors which played important role in success of telemedicine services.

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INTRODUCTION

The role of the telemedicine service providers is to facilitate patients while getting consultation over the communication channels. Service providers such as Doctor, Physician, Nursing staff and Telemedicine Operators work hard to provide timely services to the patients (Bedi B. S. 2009). Despite of significant growth in telemedicine, the service providers are facing various problems that not only effect growth of telemedicine service but also demotivates doctors and patients to undergo Telemedicine treatment (Athavale A. V *et al.* 2010). The present study also highlights various issues related to service providers' perspective. A designated questionnaire was designed to know the experience of service providers regarding with services being provided and various quality issues. The most frequently used channels of communication are video conferencing and email. The video conferencing is one of the best suitable methods of consultation where super specialist can view patients and interact with them. It is similar to face to face conversation where specialist prescribes treatment after hearing and viewing patient's records.

To consider the view point of service providers (Doctors and Telemedicine Operators), the research questionnaire were distributed. The questionnaire addressed various issues related to the quality of the telemedicine (Ramani K.V. 2004), patient's attitude (Ganesh, K. 2009), awareness G. Brindha (2013), accessibility of expert, quality of audio video tools (Vatsalan D, 2010), privacy (Kataria G. 2014),

security-safety of telemedicine tools (Jamal S. 2007), Gulati S(2007), cost of treatment, satisfaction of patients, adequate financial support by government and initiative to promote telemedicine services. In order to study the affect of the factors on quality of healthcare, use and availability of advance tools, communication network, privacy security secrecy, good quality audio video and electronic records were analysed. The critical analysis has been carried out to study the effect of various variables such as manpower, IT infrastructure on quality of healthcare services.

Objectives of the Study

The objective of the study is to identify various factors which may influence the popularity and effectiveness of practice of telemedicine services.

Data Collection and Interpretation

The study is based on primary data collection. It was collected from 25 telemedicine centres using specially designed questionnaire for service providers. There were two types of questionnaires used in the study one questionnaire deals with patients' perspective and other focus on service providers' perspective. The service providers' questionnaire covers opinion of Doctors and TM operators. The questions were asked to them were related to factors affecting the performance of Telemedicine services. The responses are measured on 5 point likert scale having intervals ranging from 1=strongly disagree, 2= disagree, 3= neither agree nor disagree and 4= agree and 5=strongly agree. The questionnaire was semi-structured in nature and designed to cover the issues like problem being faced, scope, future perspective, government

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policies and plans. To get the maximum participation and reliable data from the respondents, the purpose of the study was made clear to them. They were made convinced about the usage of data for academic purposes. The interviews were also conducted during the working sessions of few randomly selected Telemedicine centres with both the groups. The notes were also prepared during the interview sessions which helped to gain in-depth and practical knowledge of the telemedicine services. The digital questionnaire was also designed to keep into mind the busy schedule of doctors and 45 out of 110 filled questionnaires were received through online form.

Service Providers’ Perspective

Despite of significant growth in telemedicine, the service providers are facing various problems that not only effect growth of telemedicine service but also demotivate doctors and patients to undergo Telemedicine treatment. The present study also highlights various issues related to service providers’ perspective. A special questionnaire was designed to know the experiences of experience of Telemedicine service providers. The questionnaire aims to know the problems faced by the doctors and telemedicine operators while providing services to patents in telemedicine centres

Table below list various factors considered for the study along with response on likert scale.

Tables 1: Response of service providers on various factors

S.No.	Factors	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree	Total
1	Availability of advance Tools	0	0	15	52	43	110
2	Availability of Communication networks	0	2	4	41	63	110
3	Privacy Security Secrecy	0	0	9	48	53	110
4	Provision and ability of electronic records	0	4	29	42	35	110
5	Telemedicine economic perspective	2	6	5	52	45	110
6	low cost treatment through TM	0	0	0	37	73	110
7	Time saving	0	0	0	40	70	110
8	Doctor positive towards TM	7	4	2	51	46	110
9	Audio-Video quality	4	2	20	44	40	110

Table shows prominent factors which have impact on telemedicine practices in the government hospitals.

Relationship between qualitative healthcare and Advance Audio-Video tools: The study explains that there exists positive relationship analysis between overall quality satisfaction responses and responses on advance audio-video performance. The mean is 4.39 and standard deviation is 0.788 which show consistent positive responses of the respondents about the qualitative healthcare. Pearson correlation coefficient was 0.925 and 2 tailed significant level 0.00 which showed positive relationship between these two factors.

Table 2 Correlation table for variables (Quality of healthcare and audio video performance)

Factors	Pearson Correlation	Sig.(2-tailed)
Quality healthcare	Audio-Video .925**	0

** Correlation is significant at the 0.01 level (2-tailed).

Table 3 Detail of regression analysis

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.925a	0.855	0.855	0.30974

a. Predictors: (Constant), Quality healthcare

To study the strength of the relationship between quality of Healthcare and opinion about A/V quality, the regression

analysis has been carried out. Table shows two variables where independent variable is quality health care and dependent variable is audio-video performace.

The value of R may range from 0 to 1. Here the value R is 0.925 which is on higher end. It indicates strong relationship between the variables. R square (R^2) is 0.855 which indicates that 85.5 % ($100*0.855$) of variances in the dependent variable can be explained with independent variable.

Recommendations

The service providers were asked to write the suggestions which will reflect various problems being faced by them. Following are the few suggestions from telemedicine service providers.

1. Here is a need of dedicated staff with expertise to ensure efficient use of telemedicine. As per their observations, most of the time technical failure is reported as root cause of failure of telemedicine service. Furthermore, the incapability of the staff to recover the system adds more to the problem.
2. It is difficult to win competence of the patient to undergo treatment under telemedicine (Balarajan Y et al. 2011). The patients prefer to visit doctor personally. Therefore doctors and telemedicine operators have to work hard to convince and motivate patients for getting consultation over the telecommunication channel. There is a need of special training for telemedicine operators and doctors so that they can do better counseling.
3. The experts have to rely on the information provided by the patients about his illness given through audio-video conferencing. Therefore some times, physicians are not confident about the diagnosis of the patient remotely. They hesitate and seldom refer telemedicine treatment.
4. There is a need of specialized training for the doctors so that they can perform better for the tele-diagnosis and treatment.
5. There is need to build a positive and productive Patient–Physician relationship so as to bridge the communication gap.

CONCLUSION

It is revealed from the study that Telemedicine in Punjab is an emerging platform of health care. It provides easy accessible and economical treatment of healthcare for rural people. The

major concern of the study is to identify the factors that affect the growth of Telemedicine services in Punjab. The service providers' perspective towards telemedicine services were found positives and optimistic. The study concluded that service providers need to be more equipped with latest communication devices and high speed network. It's a team work task, there is need to bring closeness telemedicine services providers and expert team.

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