EFFECTIVENESS OF TELEMEDICINE IN ONE OF THE LEADING HOSPITALS IN CHENNAI

S.Varshini[1]
[1]*Student, Department of Hospital Administration, Dr. N.G.P. Arts and Science College*

C. Mohana Priya[2]
[2]*Assistant professor, Department of Hospital Administration, Dr. N.G.P. Arts and Science College*

ABSTRACT
Telemedicine has gained its importance nowadays as everything has become digital. It is a technology used to communicate services related to healthcare to persons who seek such services from a distant place. The service provider will be in one place and the seeker of such services will be located elsewhere. It is cost saving, easily accessible and adoptable. This minimizes the gap between online and offline waiting time. Telemedicine helps providers to see more patients without incurring more cost in hiring staff or office space. This study mainly focuses on the effectiveness of telemedicine in the selected hospital. A questionnaire was framed and circulated to the patients. Findings and suggestions are also form part of this study on effectiveness of telemedicine.

KEY WORDS: *Telemedicine, Effectiveness of telemedicine, Telemedicine satisfaction*

1. INTRODUCTION
A. Definition
Telemedicine involves the use of electronic communications and software to provide diagnostic services to patients without personal travel. Telemedicine technologies are often used for other diagnostic services, such as checkups, chronic disease treatment and specialist counseling etc. It provides secure video and audio communications.

B. Factors affecting telemedicine
There are several reasons for affecting the effectiveness of telemedicine. Some of the barriers exist are as follows

- Virtual service providers do not have the ability to obtain a complete history and physical examination to aid in diagnosis and treatment
- Restrictions for complex medical examinations
- Prospects for technical problems
- Security breaches
- Invalid patient information
- Unclear understanding of standards and guidelines between healthcares

The objectives of the study includes
- To improve quality of care in telemedicine
- To improve access and time savings
- To reduce the waiting lists in teleconsultation

II. LITERATURE REVIEW
According to Ayatollahi, H., F.Z.P. Sarabi, and M. Langarizadeh (2015), the study provides information on the more knowledge of the benefits and capabilities of telemedicine the users have the more positive their attitudes toward this technology are expected to be. As a result, their confidence in using this technology will increase. Consequently, if the use of a new technology is supported by the people working in the field, others will have more confidence in the use of the technology, and a higher degree of positive attitude will be realized.

According to Kohnke, A., M. L. Cole, and R. Bush (2014), the study provides information on the Telemedicine programs within health care are experiencing significant growth as healthcare organizations seek to reduce expenditures and improve efficiency. The high costs of treating chronic diseases, compounded by an aging population, has given focus to creating technology-enabled alternatives to support, enhance, or expand patient services.

According to Gheorghe, M. and R. Petre (2014), the study provides information on describing the importance of data mining techniques and systems for healthcare organizations with a focus on developing and implementing telemedicine solution in order to improve the healthcare services provided to the patients. This needs a focus on interaction, collaboration and increased sharing of information and knowledge, all of these may is in turn be leading healthcare organizations to embrace the techniques of data mining in order to create and sustain optimal healthcare outcomes.

III. METHODOLOGY

This is an exploratory research that aims on the effectiveness of telemedicine in their hospital. The simple random sampling is used in order to collect data. By considering the Morgan's table with 95% confidence and 5% error, about 210 data was collected from the hospital. For this purpose, a questionnaire has been designed; making sure that the purpose for which this research was carried out has been fulfilled. Accordingly the survey tool is a structured questionnaire divided into two parts. The first part includes the demographic questions such as state, gender, age, speciality etc. and the second part is composed of fifteen questions that test the effectiveness of telemedicine.

IV. ANALYSIS

Chart - I Chart showing the respondent's length of time for telemedicine
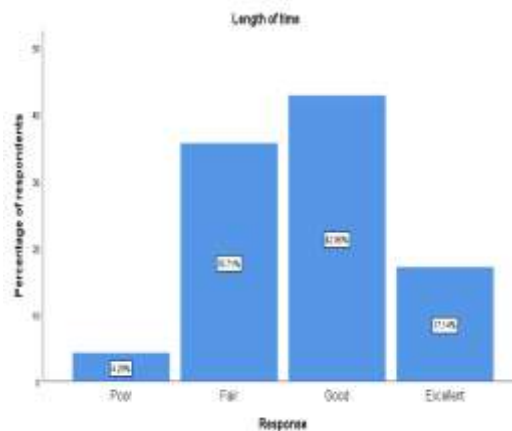
The above Chart - I shows that 4.3% of the respondents said appointment time in telemedicine was poor, 35.7% of the respondents said appointment time was fair, 42.9% of the respondents said appointment time was good and 17.1% of the respondents said appointment time was excellent.

Chart - II Chart showing the respondent's comfort in telemedicine
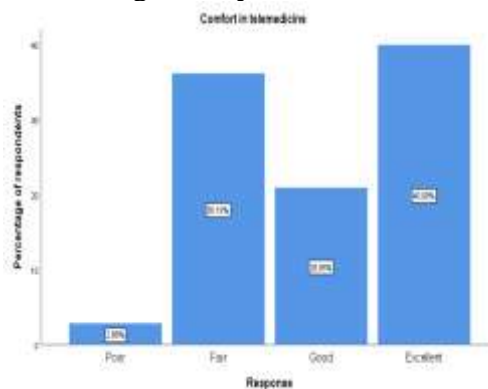
The above Chart - II shows that 2.9% of the respondents said comfortable level is poor, 36.2% of the respondents said comfortable level is fair, 21% of the respondents said comfortable level is good and 40% of the respondents said comfortable level is excellent.

Table - I showing the association between length of time and the overall satisfaction with telemedicine

CORRELATION

		Length of time	Overall satisfaction with telemedicine
Length of time	Pearson Correlation	1	.723**
	Sig. (2-tailed)		.000
	N	210	210
Overall satisfaction with telemedicine	Pearson Correlation	.723**	1
	Sig. (2-tailed)	.000	
	N	210	210

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

In the following interpretation, H denotes "Hypothesis".
H0: There is no association between length of time and the overall satisfaction.
H1: There is association between length of time and the overall satisfaction.

From the above table, the significant value is .000 which is less than .05; hence we reject HO and accept H1. Thus, we prove that there is association between length of time and the overall satisfaction with telemedicine.

Table - II showing the difference between age and the overall satisfaction with telemedicine

ANOVA

Satisfaction	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	36.281	5	7.256	9.155	.000
Within Groups	161.700	204	.793		
Total	197.981	209			

In the following interpretation, H denotes "Hypothesis".
H0: There is no difference between age and the overall satisfaction.
H1: There is difference between age and the overall satisfaction.
From the above table, the significant value is .000, which is less than .05; hence we reject HO and accept H1. Thus, we prove that there is difference between age and the overall satisfaction with telemedicine.

V. MAJOR FINDINGS & RECOMMENDATIONS

- Majority 43.8% of the respondents said check-in process in telemedicine was good, 20% of the respondents said check-in process was poor, 19% of the respondents said check-in process was fair and 17.1% of the respondents said check-in process was excellent.
- Majority 40% of the respondents said comfortable level in telemedicine is excellent, 2.9% of the respondents said comfortable level is poor, 36.2% of the respondents said comfortable level is fair and 21% of the respondents said comfortable level is good.

- For the information provided, if delay in appointment, 1.4% of the respondents strongly agrees, 34.8 of the respondents agree, 49% of the respondents neutral, 13.3% of the respondents disagree and 1.4% of the respondents disagree.
- For audio quality, 1.4% of the respondents said quality of the voice is poor, 53.3% of the respondents said quality of the voice is fair, 25.7% of the respondents said quality of the voice is good and 19.5% of the respondents said quality of the voice is excellent.
- For video quality, 1.4% of the respondents said quality of the visual is poor, 54.3% of the respondents said quality of the visual is fair, 24.8% of the respondents said quality of the visual is good and 19.5% of the respondents said quality of the visual is excellent.
- In the repeated use of telemedicine, 78.6% of the respondents said that they will use telemedicine service again and 21.4% of the respondents said that they will not use telemedicine service again.
- In the overall satisfaction of telemedicine, 21.9% of the respondents said poor, 43.8% of the respondents said fair, 19.0% of the respondents said good and 15.2% of the respondents said excellent.

The recommendation includes:
- Lighting can greatly affect video quality. Install overhead lights and a table lamp, if available, and try to avoid lighted windows in the background. Position the camera at eye level to make it easier to maintain eye contact with patients and to clearly indicate that it is exclusively targeting them
- Use a high-quality webcam so that patients can clearly see the doctor's face and feel comfortable talking about their symptoms and treatment options
- Use wired headphones, if available, with a built-in microphone for good sound quality. Most normal notebook for laptop or computer cannot hear voice clearly enough.
- Before registering, read the patient's complaints and medical records. Virtual tours are generally more efficient than personal tours, and the off-screen preparation will make them even faster.
- After consultation, be sure to explain the following steps before signing off. This can include prescription, billing, follow-up scheduling or other processes.
- Plan for other team members to join the invitation and, if necessary, determine in advance when and how to make these transitions.

- For a registration process or meeting schedule that requires a separate phone call or video visit from a supervisor, perhaps a staff social worker.

VI. CONCLUSION

In conclusion, it should be noted that the efficiency of telemedicine plays an important role in the health sector. Telemedicine increases patient satisfaction and allows them to participate in the care they receive. The major findings observed are the inefficiency of the check-in process and appropriate appointment was missing. It is suggested that these issues are taken care of and a system to rectify the same.

VII. REFERENCE

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