

THE IMPACT OF TELEMEDICINE ADOPTION ON PATIENT SATISFACTION IN MAJOR HOSPITAL CHAINS

Suman Narne

Independent Researcher, USA.

1. ABSTRACT

The impact of telemedicine on the satisfaction of the patients in large hospital chains is studied in this analysis utilizing secondary, qualitative data from the current literature. Telemedicine has become a fast-growing concept in the delivery of care and has expanded tremendously with the current Covid-19 pandemic. There are not many difficulties, which is far from being overcome, such as the technological ones, or stable levels of satisfaction compared with different types of specialists, or different aging groups. Through a review of literature, this study set up several predictors of patient satisfaction including communication, perceived credibility and virtual interactions. From the findings, it is suggested that intensified efforts could be made to address eliminating telemedicine differences through more individualized approaches. In significance, this study is useful for appreciating telemedicine at the global level as an effective tool that may influence the future healthcare system and increase patient satisfaction.

[**Keywords:** Telemedicine, Patient Satisfaction, Healthcare Delivery, COVID-19, Accessibility, Qualitative Data, Hospital Chains, Demographics, Virtual Care, Communication]

2. 1.0 Introduction

Telemedicine has expanded the effective delivery of consultation services and has established a strong presence in the major hospital groups. As the technology is rapidly applied mainly after Covid-19, evaluating patient satisfaction has become important for healthcare organizations. Satisfaction, one of the parameters of the quality of service in healthcare, affects the results of therapies and the patient's commitment. There is an increasing interest in telemedicine adoption's effects on patient satisfaction in different healthcare specialties and individual clinics. There is a lack of studies that address the Telemedicine reception's impact on patient satisfaction in large-scale hospital systems. This study aims to assess patient's satisfaction with telemedicine interventions in terms of accessibility, quality, and communication, which is taken from secondary qualitative data and investigated only major chains of hospitals.

3. 2.0 Literature Review

3.1 Evolution of Telemedicine

According to Sageena *et al.* 2021, in the article Evolution of Smart Healthcare, Telemedicine during the Covid-19 Pandemic, the author discusses how telemedicine is growing rapidly during the Covid-19 outbreak, where the author focuses on how to shift the healthcare delivery system. They focus on the benefit of telemedicine by offering uninterrupted healthcare services during times of lockdown and restrictions, together with the use of smart healthcare technologies to meet patient's requirements (Sageena *et al.* 2021). The study also discusses the barriers of telemedicine including technology accessibility and information technology

proficiency and telemedicine for the long-term solution in the delivery of healthcare. In the end, the study focuses on how central telemedicine is to the future of healthcare systems, produced by advancing technology, as well as a focus on the patient's perspective.

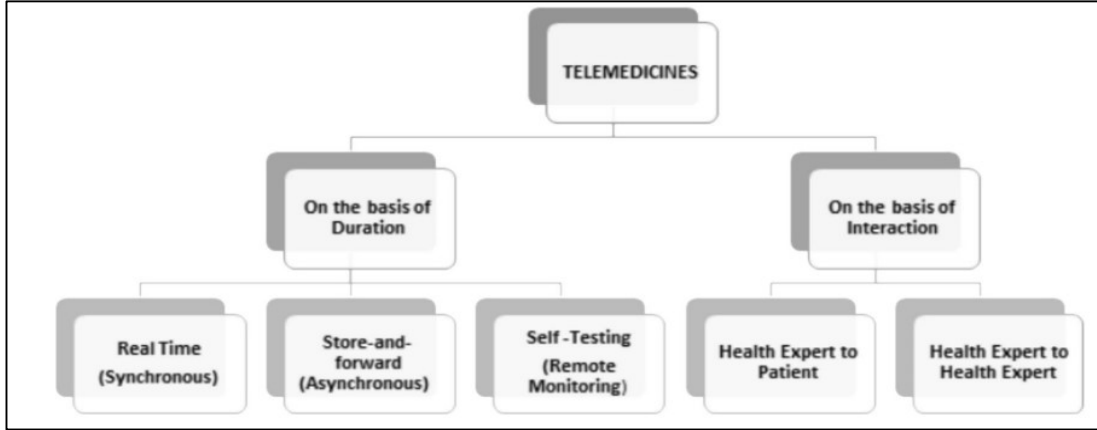


Figure 1: Types of telemedicine

(Source: Sageena *et al.* 2021)

3.2 Factors Influencing Patient Satisfaction in Healthcare

According to Abdulwahab and Zedan, 2021, in their research article, the elements influence how satisfied patients are with telemedicine in outpatient clinics. The authors aimed to determine the main areas that would enhance patient satisfaction concerning Telemedicine solutions. They consider communication, simplicity, and trust in virtual consultation as the main factors influencing patients' attitudes to such services (Abdulwahab and Zedan, 2021). The study was conducted in outpatient clinic environments and points out that although the majority of the patients enjoy the possibility of receiving telemedicine, problems with technology and the inability to meet the doctor face to face may cause dissatisfaction. According to the authors, the following are key barriers that must be addressed to improve the future of telemedicine. The user interfaces and the virtual doctor-patient relationship.

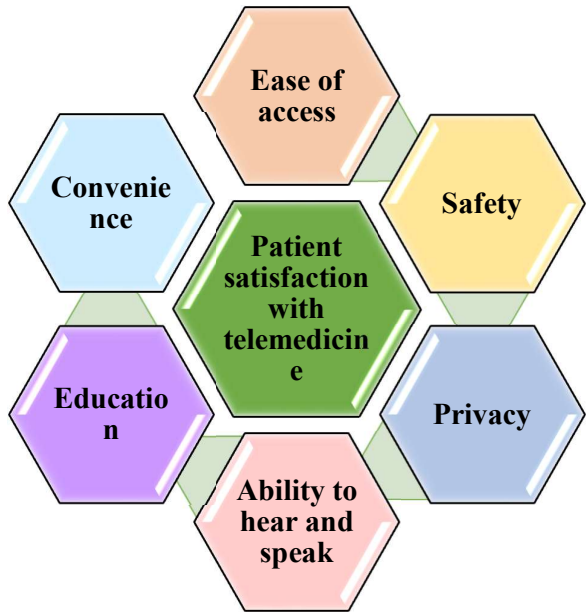


Figure 2: Patient satisfaction with telemedicine

(Source: Self-created)

3.3 The Role of Telemedicine in Improving Patient Satisfaction

According to Nguyen *et al.* 2020, the article is a review of Patient and Provider Satisfaction

with Telemedicine looks at the effectiveness of the practice and the satisfaction of patients and healthcare providers in its usage especially in light of the Covid-19 pandemic. In reviewing several different studies and reports, the review finds that patients like telemedicine for its convenience, shorter wait time, and ability to connect with specialists. Manufacturers and suppliers also confirm satisfaction with its effectiveness as of recently there are some concerns about the quality of a telemedicine appointment (Nguyen *et al.* 2020). The challenges mentioned include difficulty in connection, patient-clinician reports, and a few more but the article concludes that telemedicine, in principle, improves the provision of healthcare by allowing consultation at long distances.

Dimension of perceived quality of care	Example(s)	Likely effect of telemedicine
Overall satisfaction	This is a composite of the following examples.	Unknown
Humaneness	The “personal touch” is present with in-person visits	Reduced
Technical competence	The provider can diagnose and treat the patient’s medical condition	Unknown
Outcome	The patient’s condition improves	Unknown
Physical facilities	The patient can be seen in their home	Improved
Continuity of Care	Patients can see same provider regardless of where they, or the provider, are located	Improved
Access	Less distance may need to be traveled. This depends on how far the patient needs to travel.	Improved
Amount of information	In addition to verbal information, includes body language, the ability for back and forth discussion and immediate delivery of handouts	Reduced
Cost	Reduced need for gas, meals, hotels if travel is needed	Improved
Bureaucracy/Organization	Parking, long lines and waiting rooms can be avoided.	Improved
Attention to psychosocial problems	Patients may prefer an in-person or TM visit when discussing sensitive issues.	Unknown

Figure 3: Empirical dimensions of patients’ perception of quality of care with examples
(Source: Nguyen *et al.* 2020)

3.4 Challenges in Telemedicine Adoption

According to Aashima *et al.* 2021, in the article, these authors explore a review of patient satisfaction and experience with Telemedicine covid-19 patient satisfaction with telemedicine a possible solution during and after the pandemic. In the paper, the author discusses several works and discovers that, overall telemedicine has been positively perceived by people and can provide and deliver permanent care. However, there is some concern for such problems as the digital divide, which means that some patients cannot have access to telehealth, and lack physical examinations (Aashima *et al.* 2021). Therefore, the authors recommend that although telemedicine can act as an addition to traditional forms of health care practice, improvements in the technology and the availability to ensure patient satisfaction in the future should be made.

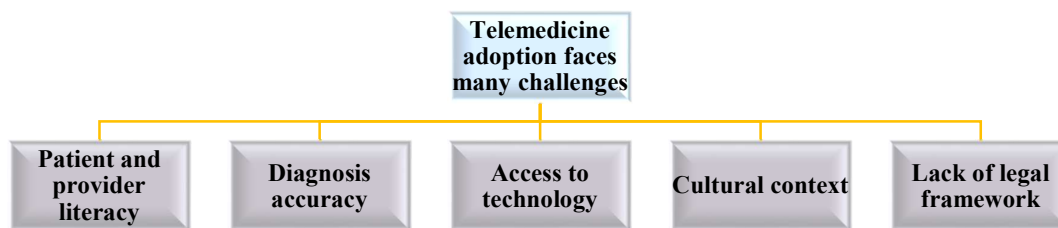


Figure 4: Challenges with telemedicine adaptation
(Source: Self-created)

4. 3.0 Methods

4.1 Research Design

The current paper uses a qualitative method to understand the effects of telemedicine integration on patient satisfaction in large healthcare systems. The sources of data collection are the current literature, patient feedback reports that are publically available and previous studies of healthcare institutions. This study aims to identify patterns and issues of telemedicine service delivery through the use of a qualitative research approach (Fairchild *et al.*2019). This design makes it possible to achieve a detailed understanding of multifaceted processes occurring in virtual healthcare concerning patient satisfaction, proceeding beyond simple numerical values and using data gathered from a range of respondents.

4.2 Data Collection Method

For this study, data is collected from secondary sources, which contain published articles, hospital records, and patient questionnaire forms. The articles included in the present literature review were published up to and including 2022, the selection of articles was based on the qualitative nature of the studies that examined patient's perceptions of telemedicine (Triantafillou *et al.*2021). Data from patient studies of large hospital groups are also examined to gain prior experience in the performance of telemedicine services. Further, there is feedback from patients rounded through the Internet and forums as receptiveness variation sources. The use of multiple sources of data in the present paper helps improve the analysis of qualitative data collected in different healthcare settings to achieve a more prosperous understanding of the nature of the factors that influence patient satisfaction when it comes to the use of telemedicine.

4.3 Data Analysis Method

The sample quantitative data, boring point analysis method is used to explain the gathered facts while the interpretation of sample qualitative data involves using analysis to explain findings. The process involves finding and providing information on the existence of trends within the data. First, the researchers will make a detailed review of the literature obtained and responses from the patients. In the next step, principles will be developed out of source texts most relevant to patient satisfaction and telemedicine encounters (Dalley *et al.*2021). These principles will then be pressed into overarching articles that could capture similarities in emotional aspiration or perception. This structured approach makes it possible to analyze the qualitative findings and identify key factors that influence telemedicine patient satisfaction.

5. 4.0 Results

5.1 Convenience and Accessibility of Telemedicine

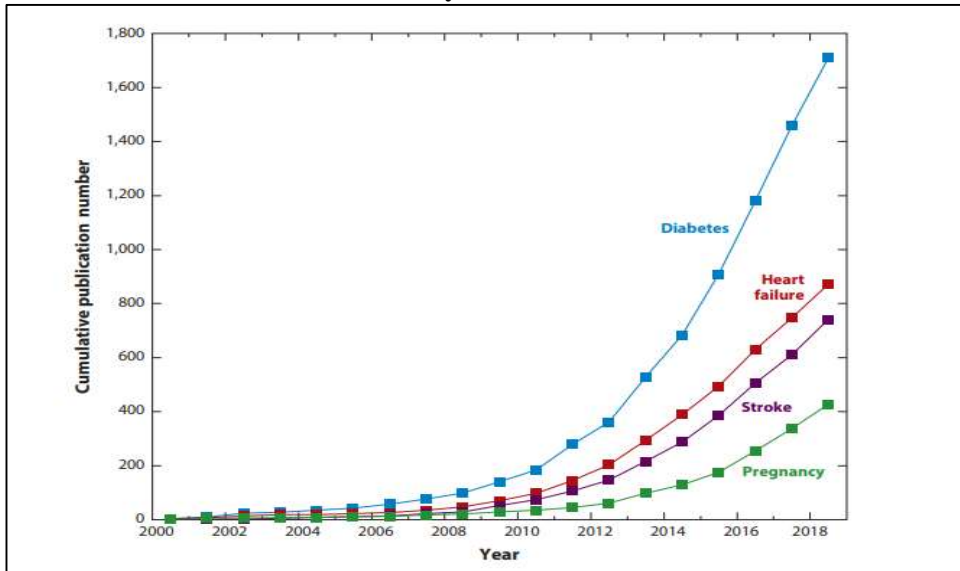


Figure 5: Cumulative PubMed publications on telemedicine (2000-Present)
(Source: Barbosa *et al.* 2021)

In this study on improving access to care and telemedicine Across Medical Domains, the author examines the changes brought by telemedicine to patients' physical reach in accessing health care across different fields of medicine. Some of the key points of the study describe the opportunities that telemedicine has brought to the deprived population, including travel distance and waiting time (Barbosa *et al.* 2021). The authors focus on that owing to the extent of telemedicine plans, the patients receive timely consultation, where it is possible to sustain a significant role in chronic diseases and psychologically charged services. This study also is on the importance of sustained funding for sustainable telehealth after the pandemic's outbreak. The study results show that, although the practice appeared to enhance access to healthcare, further challenges concerning the use of technology and patients' actions and experiences have to be rectified to enhance the efficiency of the practice of telemedicine.

5.2 Patient perceptions of the quality of care in telemedicine vs. in-person visits

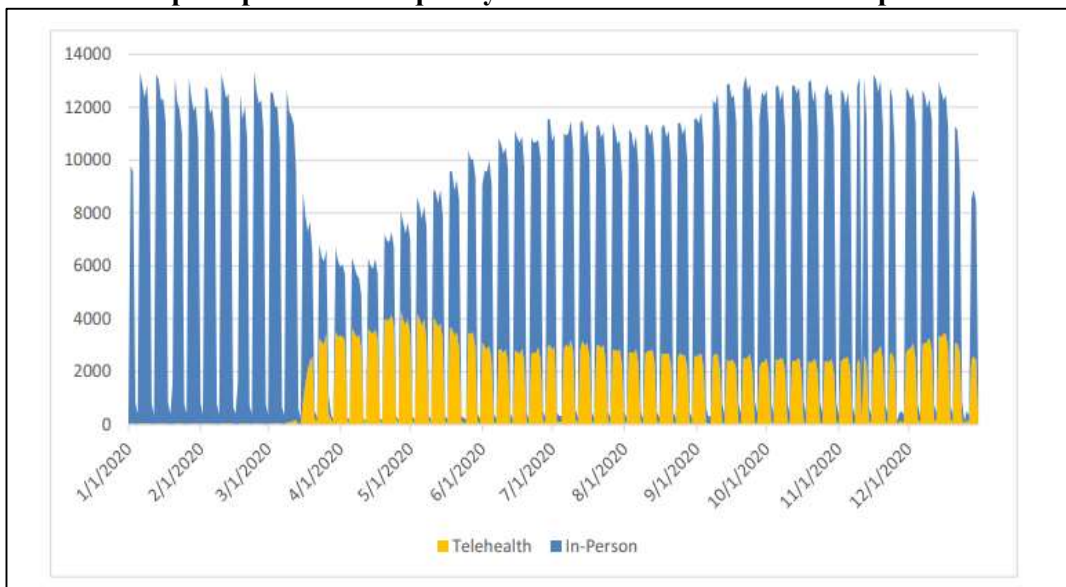


Figure 6: Pandemic impact shift to telehealth and recovery of total visits in 2020

(Source: Hays and Skootsky, 2022)

In this article the experience with the patients with in-person and telehealth visits before and during the Covid-19 Pandemic is trying to assess patient satisfaction with various modalities of contact with the healthcare system at a large combined healthcare delivery system in the United States. This study shows that most patients were satisfied with telehealth visits according to patient feedback that telehealth is convenient and they do not have too long to wait for an appointment. However, self-administered data revealed a significant reduction in satisfaction scores, especially the patient-physician encounters. The study also differentiates the demographic factors, where young people are found to utilize telehealth more than the old (Hays and Skootsky, 2022). The author's note that despite the ability of telehealth to adjust to transform to the needs that emerged during the pandemic, continued improvement of the quality of interactions with patients virtually remains compulsory when it comes to sustaining high patient satisfaction.

5.3 Communication and Interaction between healthcare providers and patients during telemedicine sessions

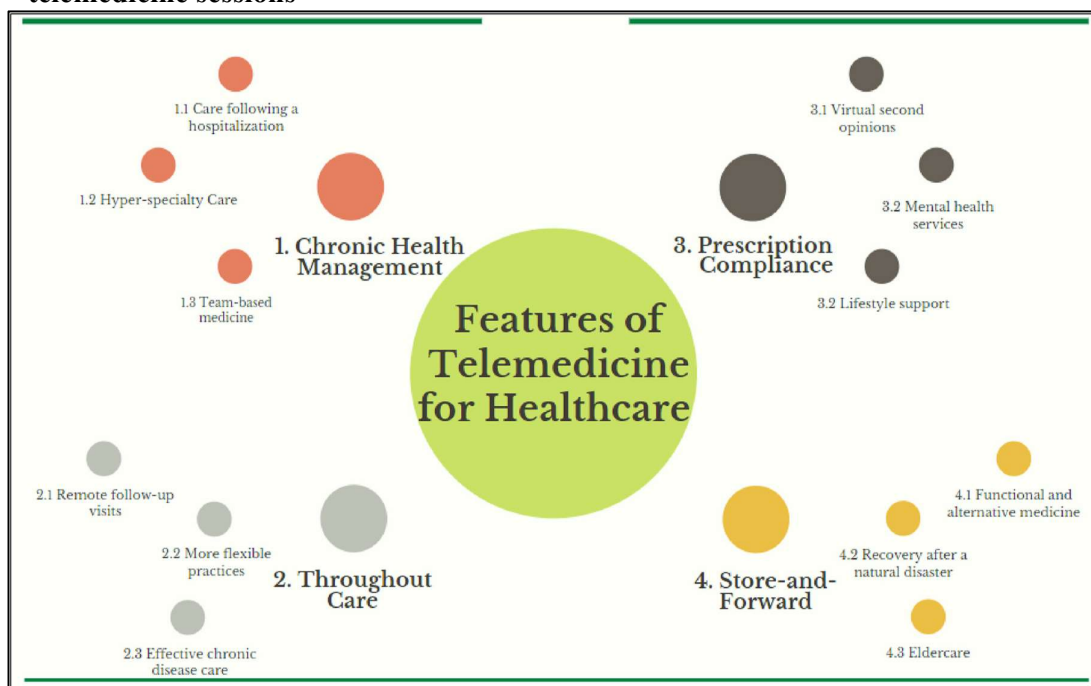


Figure 7: Various capabilities & features of telemedicine for healthcare domain

(Source: Haleem *et al.*2021)

In Telemedicine for Healthcare, The researchers have identified Capabilities, Features, Barriers, and Applications, which focus on the ability and different aspects of telemedicine showing that it is an important method in healthcare delivery. Some of the competencies brought out in the study include, distant observation, immediate communication with physicians, and enhanced referral to specialists. However, the authors also describe tremendous challenges, including technological constraints, privacy issues, and requirements for external rules. Telemedicine's popularity is rapidly increasing, particularly during the pandemic, but these challenges have to be resolved for its benefit (Haleem *et al.*2021). Lastly, this study focuses on the need to advance the infrastructure and policies to support the inclusion of telemedicine in health care services and improve patient care experience.

5.4 Differences in Patient Satisfaction across Demographics

	USE OF TELEMEDICINE ^a		USE OF VIDEO, WITHIN TELEMEDICINE SUBGROUP ^a	
	RR	95% CI	RR	95% CI
Race or ethnicity	Reference group: White			
Black/African American	0.895*	0.879–0.910	0.587*	0.571–0.602
Hispanic	0.803*	0.770–0.837	1.187*	1.147–1.229
Asian	0.948*	0.910–0.988	1.081*	1.040–1.124
Multiracial	1.152*	1.089–1.219	1.207*	1.151–1.266
American Indian or Alaskan Native	0.917	0.800–1.050	0.849	0.720–1.001
Native Hawaiian or Other Pacific Islander	0.936	0.717–1.222	0.824	0.591–1.149
Payer	Reference group: Commercial			
Medicare	1.023*	1.007–1.039	0.770*	0.756–0.785
Medicaid	1.053*	1.021–1.086	0.729*	0.699–0.760
Self-pay	1.290*	1.247–1.336	0.705*	0.671–0.741
Age at encounter, years	Reference group: Ages 56–74 (baby boomers)			
Ages 75+ (silent, greatest)	1.110*	1.085–1.134	0.969*	0.942–0.997
Ages 40–55 (Gen X)	1.180*	1.158–1.203	1.207*	1.181–1.234
Ages 25–39 (Millennials)	1.329*	1.301–1.356	1.255*	1.226–1.284
Ages 10–24 (Gen Z)	0.908*	0.878–0.938	1.332*	1.290–1.375
Ages 0–9 (Gen Alpha)	0.695*	0.654–0.740	1.286*	1.213–1.364
Sex	Reference group: Female			
Male	0.779*	0.767–0.791	1.027*	1.010–1.045

Figure 8: Relative Use of Telemedicine and Relative Use of Video, Within Telemedicine by Patient Demographics

(Source: Drake *et al.* 2022)

In considering telemedicine as new normal, Differences in Telemedicine usage by Specialty Line and Patient Demographics, it is examined the trends of telemedicine uptake based on the lines of specialty and patients. The research highlights disparities in the use of telemedicine, in which specializations like dermatology and psychiatry use the technology more than primary care. Such variations include aspects such as type of ailment, and perceived ease and adoption of technology by various age brackets (Drake *et al.* 2022). The authors explain that even though telemedicine has pivoted as a standard in delivering care, it is important to study how to work on demographic gaps. Thus, the conclusions underscore the necessity for especially motivated approaches to ensure that representative patient samples utilize telemedicine, thereby improving the rate of patient satisfaction.

5.5 Comparative Satisfaction: Telemedicine vs. Traditional Care

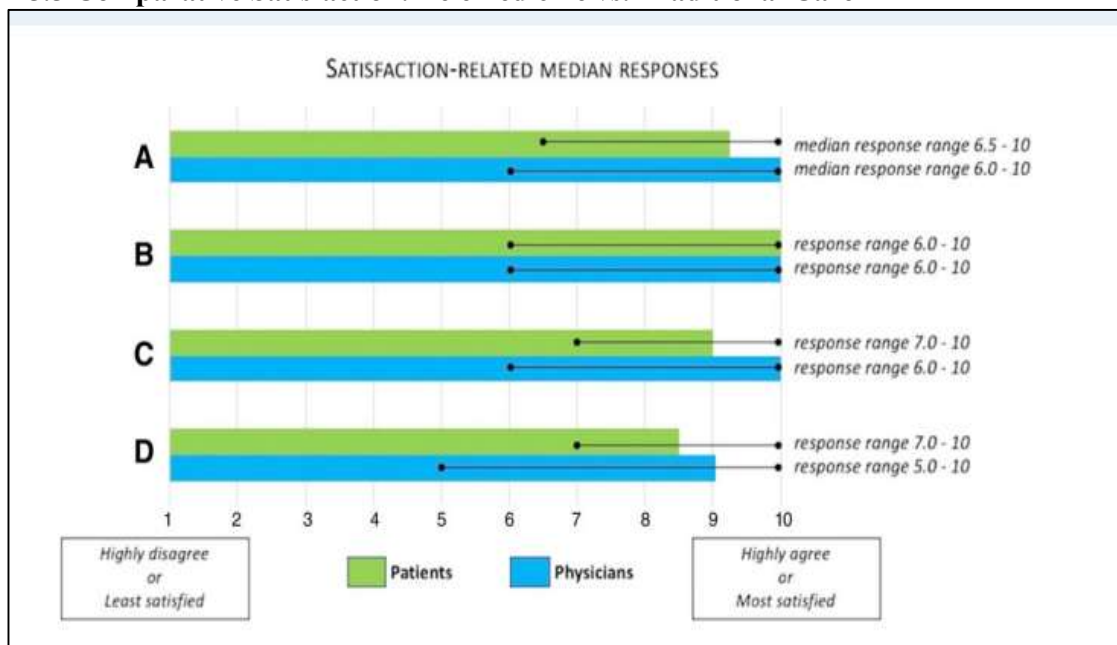


Figure 9: Satisfaction levels in Telemedicine visits

(Source: Hanson *et al.*2019)

In this, study the Telemedicine vs Office Visits in a Movement Disorders Clinic, Comparative Satisfaction of Physicians and Patients: This study compares the patient satisfaction and the physician's satisfaction with telemedicine versus routine office visits in a movement disorders clinic. The work shows that patient and physician satisfaction rates were high in telemedicine, and the perceived advantages included convenience and timesaving (Hanson *et al.*2019). However, the physicians said that doing some basic clinical examinations is impossible with telemedicine and this may affect the diagnosis and management of the patient. The study reveals that there is the capacity of telemedicine to serve the needs of patients with mobility issues. The authors support the integration of both telemedicine and in-person consultations to make the most of patient experience in specialized clinics.

6. 5.0 Discussion

The study is focused on the essential changes in patient satisfaction with the help of telemedicine, giving the perspectives of time and space. While using teleconsultations, patients save time that would otherwise be spent on traveling, and they can access various specialist services without physically visiting the facility (Chauhan *et al.*2022). There are lack of technology expertise, and many patients need physical examinations. Self-administered telemedicine surveys show that fulfillment differs between demographic characteristics and specialties implying that targeted interventions are needed to improve experiences.

7. 6.0 Future Directions in Research

More studies that are detailed should be conducted on the combination of telemedicine with face-to-face visits to improve the patient's experience. Furthermore, concluding the technological issues and the issues of developing special educational programs for both the providers and the receivers will be helpful (Gentry *et al.*2021). Future research will need to explore the effects of timely telemedicine implementation on the relative health consequences of Covid-19 and the effectiveness of various telemedicine modes, types, and communication tools for different demographic groups.

8. 7.0 Conclusion

Telemedicine can improve the level of patient satisfaction due to the possibility of receiving a

necessary amount of healthcare services with no need to visit a physician. However, the current issues and gaps that create the difference are important in raising its use. Telemedicine should be maintained as an optimal direction of healthcare development adding up trained personnel and infrastructure investments. Thus making it a valuable factor in the future healthcare delivery for all patients irrespective of income and status.

9. Reference List

Journal

- Aashima, Nanda, M. and Sharma, R., 2021. A review of patient satisfaction and experience with telemedicine: a virtual solution during and beyond COVID-19 pandemic. *Telemedicine and e-Health*, 27(12), pp.1325-1331.
- Abdulwahab, S.A. and Zedan, H.S., 2021. Factors affecting patient perceptions and satisfaction with telemedicine in outpatient clinics. *Journal of Patient Experience*, 8, p.23743735211063780.
- Barbosa, W., Zhou, K., Waddell, E., Myers, T. and Dorsey, E.R., 2021. Improving access to care: telemedicine across medical domains. *Annual review of public health*, 42(1), pp.463-481.
- Chauhan, A., Jakhar, S.K. and Jabbour, C.J.C., 2022. Implications for sustainable healthcare operations in embracing telemedicine services during a pandemic. *Technological Forecasting and Social Change*, 176, p.121462.
- Dalley, D., Rahman, R. and Ivaldi, A., 2021. Health care professionals' and patients' management of the interactional practices in telemedicine videoconferencing: A conversation analytic and discursive systematic review. *Qualitative Health Research*, 31(4), pp.804-814.
- Drake, C., Lian, T., Cameron, B., Medynskaya, K., Bosworth, H.B. and Shah, K., 2022. Understanding telemedicine's "new normal": variations in telemedicine use by specialty line and patient demographics. *Telemedicine and e-Health*, 28(1), pp.51-59.
- Fairchild, R.M., Ferng-Kuo, S.F., Laws, S., Rahmouni, H. and Hardesty, D., 2019. Telehealth decreases rural emergency department wait times for behavioral health patients in a group of critical access hospitals. *Telemedicine and e-Health*, 25(12), pp.1154-1164.
- Gentry, M.T., Puspitasari, A.J., McKean, A.J., Williams, M.D., Breitingner, S., Geske, J.R., Clark, M.M., Moore, K.M., Frye, M.A. and Hilty, D.M., 2021. Clinician satisfaction with rapid adoption and implementation of telehealth services during the COVID-19 pandemic. *Telemedicine and e-Health*, 27(12), pp.1385-1392.
- Haleem, A., Javaid, M., Singh, R.P. and Suman, R., 2021. Telemedicine for healthcare: Capabilities, features, barriers, and applications. *Sensors international*, 2, p.100117.
- Hanson, R.E., Truesdell, M., Stebbins, G.T., Weathers, A.L. and Goetz, C.G., 2019. Telemedicine vs office visits in a movement disorders clinic: comparative satisfaction of physicians and patients. *Movement disorders clinical practice*, 6(1), pp.65-69.
- Hays, R.D. and Skootsky, S.A., 2022. Patient experience with in-person and telehealth visits before and during the COVID-19 pandemic at a large integrated health system in the United States. *Journal of general internal medicine*, 37(4), pp.847-852.
- Nguyen, M., Waller, M., Pandya, A. and Portnoy, J., 2020. A review of patient and provider satisfaction with telemedicine. *Current allergy and asthma reports*, 20, pp.1-7.
- Sageena, G., Sharma, M. and Kapur, A., 2021. Evolution of smart healthcare: Telemedicine during COVID-19 pandemic. *Journal of The Institution of Engineers (India): Series B*, pp.1-6.
- Triantafyllou, V., Layfield, E., Prasad, A., Deng, J., Shanti, R.M., Newman, J.G. and Rajasekaran, K., 2021. Patient perceptions of head and neck ambulatory telemedicine visits: a qualitative study. *Otolaryngology–Head and Neck Surgery*, 164(5), pp.923-931.