Telehealth From A Patient Perspective

Servet Soygüder[1*] , Muhammed Onur Karamuk[2]
[1]Ankara Yıldırım Beyazıt University,
ORCID No: http://orcid.org/0000-0002-8191-6891
[2]Ankara Yıldırım Beyazıt University,
ORCID No: http://orcid.org/0009-0000-7145-6572

Keywords

Telemedicine, Telehealth, Digital health, Patient satisfaction, Patient-centered care,

Abstract

Telemedicine is a field of healthcare that involves the use of telecommunication technologies to provide remote medical care. By leveraging technologies such as videoconferencing, remote monitoring, and electronic messaging, healthcare providers can diagnose and treat patients in remote locations, without the need for in-person visits. Telemedicine has the potential to improve patient access to care, reduce healthcare costs, and improve health outcomes, especially for patients who live in rural or remote areas. In addition to the benefits outlined above, telemedicine has also been shown to improve patient satisfaction and reduce hospital readmission rates. Patients appreciate the convenience of being able to connect with their healthcare providers from their homes, without having to travel long distances or sit in crowded waiting rooms. Moreover, telemedicine can be especially beneficial for patients who have mobility limitations, live in rural areas, or are unable to leave their homes due to chronic illnesses. Overall, the rise of telemedicine is a positive development for patients, offering a range of benefits that can help improve their overall health and wellbeing. With the ongoing development of telemedicine technologies, the field is poised to play an increasingly important role in the delivery of healthcare services in the years to come. This study provides an overview of telemedicine and identifies its benefits and challenges. It also compares and analyzes the all-round performance of telemedicine technology compared to conventional medical services.

Research Article
Submission Date : 01.06.2024
Accepted Date : 30.12.2024

1. INTRODUCTION

A telehealth system is a system where patients and doctors can access medical counseling and treatment services using digital technologies.

[1] Resp author; e-mail: servetsoyguder@gmail.com

Unlike traditional healthcare, telehealth enables patients to receive healthcare services via phone, video call or the internet, without the need to physically visit a doctor. In this way, patients can receive faster, more efficient and affordable healthcare services without being dependent on space and time. For the patient, a telehealth system is a system that provides convenience in accessing health services. This system enables patients to see their doctors from their homes, workplaces or anywhere else. Thus, patients can receive fast and efficient healthcare services without facing problems such as long waiting times and travel costs. From the patient's point of view, telehealth allows them to avoid many medical appointments that require travel, waiting time and physical contact. It is also particularly useful for patients who live in remote areas or have difficulty traveling. In addition, thanks to telehealth, patients can see their doctor more often, regardless of their current location. The demand for telehealth services has increased, and it is expected to continue growing in the future. Dorsey and Topol (2016) provide an overview of the state of telehealth services, highlighting the potential of telehealth technologies to improve disease outcomes and reduce healthcare costs. These technologies can also provide great benefits for patients with chronic diseases and those who need continuous care. However, the article also discusses regulatory and reimbursement issues in the adoption of telehealth services, challenges and barriers in the adoption process. By discussing the current status and potential of telehealth services, this paper points out that it is a technology that can revolutionize healthcare delivery. Therefore, efforts should be made to further develop and expand telehealth services. Telemedicine, telehealth, and mobile health applications have the potential to revolutionize the way healthcare is delivered by providing patients with access to care regardless of their location. However, despite the many opportunities offered by these technologies, there are still significant barriers that need to be overcome to ensure their widespread adoption and integration into healthcare systems. In their article, "Telemedicine, telehealth, and mobile health applications that work: Opportunities and barriers," Weinstein et al. (2014) discuss these opportunities and barriers, as well as strategies for successful implementation and integration of telemedicine, telehealth, and mobile health applications into healthcare systems.

According to a recent systematic review and narrative analysis of telemedicine and patient satisfaction, telemedicine has been shown to increase patient satisfaction and reduce hospital readmission rates (Kruse et al., 2017). Additionally, telemedicine has been found to improve healthcare access and quality for rural and underserved populations (Dullet et al., 2017). With the ongoing development of telemedicine technologies, the field is poised to play an increasingly important role in the delivery of healthcare services to patients. This article by Ohannessian, Duong, and Odone (2020) calls for the integration and implementation of global tele-medicine into health systems during the COVID-19 pandemic. The article underlines the importance of tele-medicine and emphasizes that its use should increase in the fight against the COVID-19 pandemic. In addition, the authors address issues such as developing appropriate infrastructures for health systems to effectively implement tele-medicine, addressing legal and ethical issues, training of healthcare professionals, and acceptability of tele-medicine. A study by Haukipuro et al. (2018) focuses on the ethical implications of telehealth applications for patients in the aging process. We should not forget that telehealth services are connected to a computer and smart communication tools. Telehealth services can be performed on web and

smart communication device applications. IOS and Android applications are the leading mobile applications. There are thousands of designed applications in the world. Their success rates and security scales are very important for users. It is seen that many studies have been done on this subject (Payo et al., 2021; Mendi et al., 2022; Messner et al., 2020; Miro et al., 2021; Payo et al., 2019). In addition, the World Health Organization is working very hard on this subject. It conducts many statistical analyzes on traditional and digital health systems (Kay et al., 2011). In addition, the European Union also provides many projects supports related to health and digitalization. This study is a result of the project called "Digital Youth Life Health Platform (DYL-HP)" numbered 2021-2-TR01-KA220-YOU-000049540, supported by the European Union and the Turkish National Agency (Soyguder, 2024).

This study was conducted to understand how telehealth applications can affect patients' lives and to assess the ethical appropriateness of these applications. Therefore, it addresses issues such as the effects of telehealth applications on patients' quality of life, as well as ethical issues and compliance with laws and regulations governing the use of telehealth applications. However, telehealth may not be suitable for all medical conditions. Diagnosis and treatment of some diseases may require a physical examination, which can make telehealth difficult. Also, some patients may not have access to digital technologies or may find it difficult to use technology. Therefore, telehealth may not be suitable for all patients and each case may require careful consideration. To provide a comprehensive understanding of the potential of telemedicine in transforming the delivery of healthcare services to patients, we will reference several key articles and studies throughout this paper. In this paper, we will provide an overview of telemedicine for patients, highlighting the benefits and challenges of this approach, as well as discussing the latest developments and innovations in the field.

2. BENEFITS OF TELEHEALTH FOR PATIENTS

From a patient perspective, telehealth offers a number of important benefits and greatly improves access to and experience of healthcare. Here are some of the key benefits of telehealth for patients:

- Ease of Access: By eliminating geographical distances, telehealth offers an inclusive solution for patients living in remote areas or with limited access to healthcare services. It provides quick access in cases such as emergencies or follow-up of chronic diseases.
- Time and Cost Savings: The time it takes to access traditional healthcare services and travel costs can be minimized through telehealth. Patients can get expert opinions without leaving their homes and manage their time more effectively.
- Personalized Healthcare: Telehealth offers personalized healthcare services that focus on the individual needs of patients. By analyzing patients' health data, healthcare professionals can create customized treatment plans and better adapt to patients' health conditions.
- Remote Monitoring and Management: For individuals with chronic diseases, telehealth offers remote monitoring and management. Patients can monitor their vital signs in their own homes and update their treatment plans by regularly connecting with healthcare professionals.

- Reduced Stigma and Privacy Concerns: For some patients, accessing in-person healthcare services can be difficult, especially for individuals with psychological or emotional issues. Telehealth reduces such concerns, allowing patients to access healthcare services in a more comfortable and confidential manner.
- Patient-to-Patient Communication and Support Groups: Telehealth platforms provide access to patient communities and support groups. This encourages the sharing of experiences between individuals with similar health conditions and increases solidarity between patients.
- Emergency Response: Telehealth facilitates rapid interventions for emergencies. Remote healthcare professionals can communicate with patients and give necessary instructions during emergencies.

3. CHALLENGES OF TELEHEALTH FOR PATIENTS

Telehealth applications may face some challenges. These challenges may prevent or make it difficult for patients to take full advantage of telehealth apps. Some key challenges may include:

- Technology access: Some patients may not have access to telehealth apps. In particular, the elderly or people unfamiliar with technology may experience difficulties accessing technology.
- Technology use: Using telehealth apps can be difficult for some patients. The complexity of the apps can make them difficult to use and prevent patients from fully utilizing telehealth apps.
- Service quality concerns: Some patients may be concerned that the quality of telehealth apps may be inferior to traditional face-to-face healthcare. These concerns may prevent patients from opting for telehealth apps.
- Limited personal interaction with health professionals: Telehealth apps can have limitations due to the lack of personal contact. This may occur because patients are unable to have personal interaction with health workers.

4. PATIENT SATISFACTION WITH TELEHEALTH

Telehealth has revolutionized healthcare services and has the potential to provide faster, accessible and personalized solutions to patients' health needs. In this context, patient satisfaction, which is a determining factor in the success of telehealth, is of increasing importance. Patient satisfaction is a key indicator of the user’s experience of telehealth services. This includes the ability of patients to communicate with health professionals in virtual environments, use remote monitoring algorithms and participate in teleconsultations. Many studies in the relevant literature reveal that patient satisfaction increases with the advantages offered by telehealth services. Telehealth services allow patients to overcome the problems of geographical distance, reduce waiting times, and access health services more frequently and quickly. These factors increase the value patients derive from telehealth services and positively affect their satisfaction. However, patient satisfaction is shaped not only by technological conveniences, but also by human-centered approaches in telehealth services. Strong communication with healthcare professionals, empathy, and respect for patient privacy are

factors that determine the quality of telehealth services. As a result, patient satisfaction in telehealth, combined with fast access, personalized services, effective communication and the advantages offered by technology, positively affect patients' health experience. In this context, focusing on patient satisfaction in the design and implementation of telehealth services is important to ensure the sustainable success of these innovative healthcare solutions.

5. ETHICAL CONSIDERATIONS IN TELEHEALTH

Telehealth has undergone significant evolution with the digitalization and remote accessibility of healthcare services. However, along with the possibilities brought by this transformation, ethical considerations should also be an important focus. Patients are very sensitive to ethical issues such as privacy, security and proper use of health data when using telehealth services. The security of personal health information shared with healthcare professionals in virtual environments is a fundamental requirement for patients to use these services safely. Furthermore, ensuring informed consent in the use of telehealth applications is critical to support patients' understanding of this technology and their active participation in their own health processes. Therefore, strict application of ethical standards in the processes starting from the design of telehealth applications to service delivery is vital to ensure the trust of patients and to make the most of the potential advantages of this technology.

6. FUTURE OF TELEHEALTH FROM A PATIENT PERSPECTIVE

The evolution of telehealth is about to radically change the way patients participate, access and experience healthcare. In the future, patients will be increasingly empowered to access healthcare more quickly and easily. Remote consultations, health monitoring through mobile apps and wearables will enable patients to be more engaged in their own health journey. Moreover, technological innovations such as artificial intelligence and big data analytics will help patients better understand their health data and translate it into personalized health plans. From a patient perspective, future telehealth will be a catalyst for the transition to a healthier and connected lifestyle by providing individuals with the opportunity to manage and experience healthcare more closely. In this context, it is envisioned that future telehealth applications will play an important role in providing a user-friendly and effectively integrated experience that is responsive to patients' needs.

7. CONCLUSION

Telehealth represents a significant transformation in the healthcare sector, with a range of benefits to enable patients to participate more closely and effectively in healthcare services. These advantages include ease of access, time and cost savings, personalized healthcare services, remote monitoring, reduced stigma and emergency interventions, enrich the health experience of patients and provide healthcare professionals with the opportunity to deliver more effective care. Telehealth enables patient-to-patient communication and support groups, increasing solidarity and information sharing among patients and strengthening a sense of community. This is an important source of support, especially for individuals with chronic diseases. In traditional healthcare services, since digital technology and remote healthcare

treatment systems are not used, it can create many negative consequences, such as carbon footprint, loss of time, travel expenses and poor psychological states. However, for telehealth to be successful, special attention needs to be paid to ethical standards and safety. Protecting patients' privacy and data security is a critical factor for the sustainability of this innovation. In conclusion, from a patient perspective, telehealth is leading a journey that expands access to healthcare, promotes individualized care and builds patient trust. This is an important step towards a more inclusive, accessible and patient-friendly future for the healthcare sector. As a result of this study, the advantages of digitalization and remote healthcare services in healthcare and the measures that need to be taken have been analyzed and discussed.

CONFLICTS OF INTEREST

The authors declared that there is no conflict of interest.

REFERENCES

Abut, T., & Soygüder, S. (2015). Motion control in virtual reality based teleoperation system. In 2015 23nd Signal Processing and Communications Applications Conference (SIU) (pp. 2682-2685). IEEE.

Abut, T., & Soyguder, S. (2017). Real-time control of bilateral teleoperation system with adaptive computed torque method. Industrial Robot: An International Journal, 44(3), 299-311.

Bashshur, R. L., Shannon, G. W., & Krupinski, E. A. (2016). The taxonomy of telemedicine. Telemedicine and e-Health, 22(8), 563-573.

Doniec, R. J., Piaseczna, N. J., Szymczyk, K. A., Jacennik, B., Sieciński, S., Mocny-Pachońska, K., Duraj, K., Cedro, T., Tkacz, E. J., & Glinkowski, W. M. (2022). Experiences of the Telemedicine and eHealth Conferences in Poland—A Cross-National Overview of Progress in Telemedicine. Applied Sciences, 13(1), 587. https://doi.org/10.3390/app13010587

Dorsey, E. R., & Topol, E. J. (2016). State of telehealth. New England journal of medicine, 375(2), 154-161.

Dorsey, E., Okun, M. S., & Bloem, B. R. (2020). Care, convenience, comfort, confidentiality, and contagion: the 5 C's that will shape the future of telemedicine. Journal of Parkinson's disease, 10(3), 893-897.

Dullet, N. W., Geraghty, E. M., Kaufman, T., Kissee, J. L., King, J., Dharmar, M., ... & Blackburn, S. (2017). Impact of a university-based outpatient telemedicine program on time savings, travel costs, and environmental pollutants. Value in health, 20(4), 542-546.

Ekeland, A. G., Bowes, A., & Flottorp, S. (2010). Effectiveness of telemedicine: a systematic review of reviews. International journal of medical informatics, 79(11), 736-771.

Haukipuro, K., Ohinmaa, A., Winblad, I., & Linden, T. (2018). Ethical implications of e-health including telemedicine in the context of aging: a systematic review. Scandinavian Journal of Caring Sciences, 32(1), 11-19.

Hollander, J. E., & Carr, B. G. (2020). Virtually perfect? Telemedicine for Covid-19. New England Journal of Medicine, 382(18), 1679-1681. doi:10.1056/NEJMp2003539

Jnr, B. A. (2020). Use of telemedicine and virtual care for remote treatment in response to COVID-19 pandemic. Journal of medical systems, 44(7), 132.

Kay, M., Santos, J., and Takane, M. (2011). mhealth: New horizons for health through mobile technologies. World Health Organization, 64(7):66–71.

Kruse, C. S., Krowski, N., Rodriguez, B., Tran, L., Vela, J., & Brooks, M. (2017). Telehealth and patient satisfaction: a systematic review and narrative analysis. BMJ open, 7(8), e016242.

Kvedar, J., Coye, M. J., & Everett, W. (2014). Connected health: A review of technologies and strategies to improve patient care with telemedicine and telehealth. Health Affairs, 33(2), 194-199. doi:10.1377/hlthaff.2013.0992

Ma, Y., Zhao, C., Zhao, Y., Lu, J., Jiang, H., Cao, Y., & Xu, Y. (2022). Telemedicine application in patients with chronic disease: a systematic review and meta-analysis. BMC Medical Informatics and Decision Making, 22(1), 1-14.

Martin-Payo, R., Carrasco-Santos, S., Cuesta, M., Stoyan, S., Gonzalez-Mendez, X., and Fernandez-Alvarez, M. d. M. (2021). Spanish adaptation and validation of the user version of the mobile application rating scale (uMARS). Journal of the American Medical Informatics Association, 28(12):2681–2686.

Mendi, O., Sari, M. K., Stoyanov, S., and Mendi, B. (2022). Development and validation of the Turkish version of the mobile app rating scale MARS-TR. International Journal of Medical Informatics, 166:104843.

Messner, E.-M., Terhorst, Y., Barke, A., Baumeister, H., Stoyanov, S., Hides, L., Kavanagh, D., Pryss, R., Sander, L., Probst, T., et al. (2020). The German version of the mobile app rating scale (MARS -G): development and validation study. JMIR mHealth and uHealth, 8(3):e14479.

[Miro et al., 2021] Miro, J., Llorens-Vernet, P., et al. (2021). Assessing the quality of mobile health-related apps: interrater reliability study of two guides. JMIR mHealth and uHealth, 9(4):e26471.

Payo, R. M., Álvarez, M. F., Díaz, M. B., Izquierdo, M. C., Stoyanov, S. R., and Suárez, E. L. (2019). Spanish adaptation and validation of the mobile application rating scale questionnaire. International Journal of Medical Informatics, 129:95–99.

Ohannessian, R., Duong, T. A., & Odone, A. (2020). Global telemedicine implementation and integration within health systems to fight the COVID-19 pandemic: A call to action. JMIR Public Health and Surveillance, 6(2), e18810. doi:10.2196/18810

Sosnowski, R., Kamecki, H., Joniau, S., Walz, J., Klaassen, Z., & Palou, J. (2020). Introduction of telemedicine during the COVID-19 pandemic: a challenge for now, an opportunity for the future. European urology, 78(6), 820.

Tuckson, R. V., Edmunds, M., & Hodgkins, M. L. (2017). Telehealth. New England Journal of Medicine, 377(16), 1585-1592.

Vidal-Alaball, J., Acosta-Roja, R., Pastor Hernández, N., Sanchez Luque, U., Morrison, C., Narejos Pérez, S., ... Garcia Cuyàs, F. (2020). Telemedicine in the face of the COVID-19 pandemic. Atención Primaria, 52(6), 418-422. doi:10.1016/j.aprim.2020.04.005

Weinstein, R. S., Lopez, A. M., Joseph, B. A., & Erps, K. A. (2014). Telemedicine, telehealth, and mobile health applications that work: Opportunities and barriers. American Journal of Medicine, 127(3), 183-187. doi:10.1016/j.amjmed.2013.10.009

World Health Organization. (2010). Telemedicine: opportunities and developments in Member States: report on the second global survey on eHealth. World Health Organization.

Soyguder, S., (2024). Digital Youth Life Health Platform. Supported by the European Union and the Turkish National Agency. Project number: 2021-2-TR01-KA220-YOU-000049540. (2022), https://www.dyl-hp-aybu.org/