

Perceptions and Barriers of Occupational Therapists in Using Telehealth with Patients with Stroke: A Cross-Sectional Study

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Abstract

Background: Telehealth use is increasing among occupational therapists.

Aim of Study: This study aimed to investigate occupational therapists' use rates, attitudes, and perceptions of telehealth for patients with stroke while identifying key barriers to its implementation.

Material and Methods: The study employed a cross-sectional online survey design, utilising convenience and snow-ball sampling techniques. Participants were recruited from the Saudi Occupational Therapy Association (SOTA) membership. Respondents first completed demographic questions and indicated whether they provided telehealth to stroke patients in either governmental or private healthcare settings. Those who answered "yes" proceeded to the full questionnaire, while those who answered "no" were directed to the final section on perceived barriers. Only occupational therapists with at least two years of experience were included in the study.

Results: A total of 50 occupational therapists have participated in this study, of which 24 participants (48%) reported utilising telehealth with stroke patients, while 26 (52%) indicated that they did not. Of the Telehealth users (n=24), more than 70% reported the usefulness of Telehealth with stroke patients, believing it enhances the quality of occupational therapy services. Additionally, 80% agreed to use telehealth with stroke patients, demonstrating widespread acceptance of its potential benefits. 79.2% showed confidence in the confidentiality of telehealth services. However, other aspects of telehealth beliefs showed more moderate levels of agreement. For instance, 54.2% of telehealth user participants trusted the reliability of information transmitted via telehealth, and 45.8% believed that patients could effectively use telehealth

equipment independently. Barriers reported by all participants (n=50) to telehealth utilisation include lack of patient cooperation (66%), insufficient equipment (52%), poor technical support (48%), and lack of time or busy schedules (38%). These findings highlight the perspectives of occupational therapists; while many appreciate the advantages of telehealth, addressing these barriers is critical to achieving its full integration into stroke rehabilitation practices.

Conclusion: This study demonstrates a positive attitude towards telehealth among occupational therapists. However, addressing identified barriers, such as ensuring adequate equipment and technical support and providing comprehensive training, is crucial for successful telehealth implementation in stroke rehabilitation.

Key Words: E-health – Telehealth – Occupational Therapists – Patients with stroke.

Introduction

TELEHEALTH is the use of electronic and telecommunications technologies to support and promote long-distance clinical health care, patient and professional health-related education, and public health and administration [1].

Telehealth has become increasingly prominent, with telerehabilitation emerging as a promising approach for rehabilitation services [2]. Telerehabilitation enables occupational therapists (OTs) to remotely provide therapeutic activities and exercises. Therapists can guide patients through activities using video screens and real-time feedback, ensuring clients perform tasks correctly and safely in their home environment [3]. The adoption of telehealth has expanded extensively after COVID-19, as the pandemic called for remote healthcare solutions to ensure continuity of care while minimising physical contact [4].

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Telehealth is considered an adjacent service for OTs, enabling them to conduct assessments and some interventions remotely. This approach is particularly beneficial for patients with stroke and mobility challenges, as it allows therapists to assess patients in their home environments [5]. Many survivors of stroke face significant mobility challenges that make attending in-person appointments difficult. Thus, telehealth provides rapid access to rehabilitation services, which improves the quality of life for patients by enabling care from home [6].

In Saudi Arabia, the Ministry of Health has prioritised e-health as a cornerstone of its “Vision 2030” initiative, aiming to enhance healthcare efficiency and accessibility [7,8]. Since 2017, applications like “Seha” and “Tawakkalna” have been launched to facilitate service delivery [9]. Despite these advances, the use of telehealth by OTs with stroke patients is not fully understood. OTs encounter barriers to implementing telehealth, particularly in the context of stroke rehabilitation [10].

This study aims to uncover the barriers preventing OTs from using telehealth services with stroke patients by identifying the use rates, attitudes, and perceptions of OTs.

The research question guiding this study was: What is the perceived use rate of telehealth, as well as the attitudes, perceptions, and barriers encountered by OTs when implementing telehealth services with patients with stroke?

Material and Methods

This cross-sectional online survey invited the participation of OTs working in governmental and private sectors who are registered with the Saudi Occupational Therapy Association (SOTA) and have a minimum of two years of experience in providing telehealth services to patients recovering from a stroke. Individuals excluded from the study included OT students and interns. This study was ethically approved by the Institutional Review Board at King Saud University (No E-24-9172). Informed written consent was obtained from all participants in the study, and all participants were asked to sign a consent form before participating.

This study adopted a survey instrument from a previously published study by Alghamdi et al. (2022), after obtaining use permission from the author, to assess OTs’ utilisation rates, attitudes, and perceptions regarding telehealth services. The primary objective was to identify barriers to the implementation of telehealth with stroke patients. Secondary objectives included exploring the use

rate of telehealth, as well as OTs’ attitudes and perceptions toward its use. The self-administered survey, requiring approximately 5-10 minutes to complete, encompassed seven distinct domains.

The first domain collected demographic information and enquired about prior telehealth usage. Participants responded with a binary choice (yes/no). If participants affirmed prior telehealth use, they proceeded with questions regarding years of telehealth experience and subsequently completed the full questionnaire. Conversely, participants who denied prior telehealth or telemedicine use were directly routed to the final domain concerning barriers to its implementation.

The second domain, which is intended for telehealth user participants, assessed OTs’ awareness and knowledge of telehealth. The third domain evaluated OTs’ attitudes, comfort levels, and recommendations about telehealth. The fourth domain focused on the impact and utilisation of telehealth in clinical practice. The fifth domain explored OTs’ beliefs regarding telehealth, while the sixth domain addressed the need for relevant training, as shown in Table (2). Domains two through six employed a 5-point Likert scale for participant responses. The seventh and final domain consisted of a single open-ended question enquiring about barriers and constraints that hinder the use of telehealth services with stroke patients.

Data collection was conducted through convenient sampling and a snowball method from September 2024 to December 2024. The survey was distributed through an online platform, Survey Monkey (Survey Monkey Inc., San Mateo, California, USA), to OTs working in governmental and private sectors and registered with the SOTA. Participation in the study was voluntary, and consent was obtained upon completion of the surveys. Detailed information was provided to participants about the study’s aim, inclusion and exclusion criteria, and the confidentiality of the responses.

IBM SPSS Statistics, version 30, was used to analyse the data. Descriptive statistics, including frequencies and percentages, were calculated to summarise the participants’ demographic information. Likert scale questions assessing specific domains such as knowledge and awareness, attitude, practice, belief, and training were analysed using frequencies and percentages to identify response patterns and trends. In addition, a checklist question on perceived barriers to telehealth implementation was analysed by calculating the percentage of each selected barrier.

Results

Based on statistics obtained from the Saudi Commission for Health Specialities, the total number of OTs registered in Saudi Arabia in 2022 is 884. Using a 95% confidence level, 5% margin of error, and 50% response distribution, the estimated required sample size was 268. However, a total of 50 OTs met the inclusion criteria and completed the online survey between October 10th and November 22nd, 2024. Among these 50 participants, 24 (48%) reported using telehealth with stroke patients, while 26 (52%) indicated that they did not. All participants had a minimum of two years of occupational therapy experience.

Only the participants who reported utilising telehealth completed the full questionnaire related to attitudes, practices, beliefs, and training, while the remaining participants answered only the section related to perceived barriers.

Table (1): Demographic data and characteristics of participating occupational therapists. (n = 50).

Demographic	Frequency (Percentage)
<i>Age:</i>	
25-34	41 (82%)
35-44	4 (8%)
45-54	1 (2%)
55-64	1 (2%)
65+	3 (6%)
<i>Gender:</i>	
Male	27 (54%)
Female	23 (46%)
<i>Geographical location:</i>	
Western Region	4 (8%)
Central Region	33 (66%)
Southern Region	6 (12%)
Eastern Region	6 (12%)
Northern region	1 (2%)
<i>Type of hospitals:</i>	
Primary care	32 (64%)
Tertiary hospitals	18 (36%)
<i>Do you use Telehealth with patients with stroke:</i>	
Yes	24 (48%)
No	26 (52%)

The following results are based on responses from the 24 participants who reported using telehealth with stroke patients. These participants completed domains two to six, covering awareness, attitudes, practice, beliefs, and training, as shown in Table (2).

Awareness/knowledge domain:

A large proportion of telehealth user participants (70.8%) perceived telehealth as a valuable tool and held positive views regarding its application for stroke patients. However, a slightly lower percentage (41.7%) think positively about using telehealth for stroke patients.

Attitude domain:

The majority of the participants, 83.4%, agreed that they use telehealth with patients with stroke; 62.5% of the telehealth user participants agreed that they feel comfortable using communication technologies, and 58.3% of telehealth user participants agreed that they would recommend telehealth use for patients with stroke.

Practice domain:

In this domain, there are seven questions targeting the telehealth practice in OT, as shown in Table (2). In the first question, 66.6% of participants agreed that telehealth had changed their working routine. In the second question, 79.1% of participants agreed that telehealth enables them to access patients' information more quickly. However, in question three, a variation of responses was seen regarding the extent of telehealth use in the workplace, while the majority of the participants expressed disagreement (37.5%) or remained neutral (33.3%).

In the fourth question, there was a strong agreement (83.3%) among the participants that telehealth is a useful method for patients with transportation difficulties. Question five showed that 45.8% of participants agreed that patients with strokes accept telehealth implementations in therapy sessions. However, when responding to question number six, regarding patients' preference for using telehealth, the majority of participants responded neutral (41.7%), while 33.4% agreed and 25% disagreed. In the final question, 58.3% of participants agreed that they would like to use telehealth if they were the patients.

Beliefs domain:

This domain consists of 12 questions focusing on the beliefs of OTs in using telehealth with patients with stroke. In the first question, around 45.9% of participants agreed that patients were effectively using telehealth equipment, while in question number two, around 54.1% agreed with the reliability of the transmitted information from stroke patients.

Regarding the confidentiality of the patient's information, around 79.2% of participants agreed

that telehealth is a confidential program. In the fourth question, 79.1% of participants agreed that telehealth methods enable them to monitor specific outcomes of patients with stroke. Consistently, in question five, 70.8% of participants agreed that telehealth facilitates the care of patients with stroke.

In question number six, only 54.1% of the participants agreed that they could use telehealth to reassess patients with stroke. Question number seven revealed that the majority (87.5%) of participants agreed that they know when to stop using telehealth services with patients with strokes. Furthermore, in question number eight, around 54.2% of participants agreed that telehealth improves their practice. Remarkably, in question number nine, 83.3% of participants agreed that telehealth helps to monitor patients with strokes more rapidly.

While the majority of the participants, 70.8%, showed agreement with question number ten re-

garding the fact that telehealth implied a major modification in their clinical practice. Only 54.2% of participants agreed that their workplace has enough appropriate technology for telehealth in answering question number eleven. Finally, 87.5% of participants agreed that telehealth is a beneficial idea to monitor patients with stroke.

Training Domain:

In this section, participants answer four questions to explore their training. The participants showed a remarkably strong agreement, with 91.7% of them reporting that they want to receive training on telehealth, with only 58.3% of participants agreeing that they had sufficient training to effectively use telehealth. Moreover, a high percentage of participants agreed that they are comfortable training patients with strokes to use telehealth (75%) and training peers to use telehealth (75%).

Table (2): Perception of Telehealth Applications among Occupational Therapists with Patients with Stroke (n = 24).

Domains and items	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
<i>Awareness/ knowledge domain:</i>					
1- Telehealth is a useful application in occupational therapy health care quality and delivery for patients with stroke	5 (20.8%)	12 (50%)	5 (20.8%)	1 (4.2%)	1 (4.2%)
2- Telehealth is easy to use with patients with stroke	4 (16.7%)	6 (25%)	7 (29.2%)	6 (25%)	1 (4.2%)
3- I think positively about using Telehealth with patients with stroke in clinical facilities	5 (20.8%)	12 (50%)	3 (12.5%)	4 (16.7%)	0 (0%)
<i>Attitude domain:</i>					
1- I intend to use Telehealth with patients with stroke when applicable	10 (41.7%)	10 (41.7%)	2 (8.3%)	2 (8.3%)	0 (0%)
2- I feel comfortable with information and communication technologies	7 (29.2%)	8 (33.3%)	4 (16.7%)	3 (12.5%)	2 (8.3%)
3- I would recommend the use of Telehealth with patients with stroke	6 (25%)	8 (33.3%)	7 (29.2%)	3 (12.5%)	0 (0%)
<i>Practice domain:</i>					
1- The use of Telehealth changed my working routine	5 (20.8%)	11 (45.8%)	5 (20.8%)	2 (8.3%)	1 (4.2%)
2- The use of Telehealth enables me to have quicker access to information of the patients with stroke	5 (20.8%)	14 (58.3%)	2 (8.3%)	1 (4.2%)	2 (8.3%)
3- Everyone in my workplace uses Telehealth with patients with stroke	2 (8.3%)	4 (16.7%)	8 (33.3%)	9 (37.5%)	1 (4.2%)
4- Telehealth is useful for patients with stroke who have transportation difficulties	12 (50%)	8 (33.3%)	4 (16.7%)	0 (0%)	0 (0%)
5- Based on my experience, patients with stroke accept Telehealth	3 (12.5%)	8 (33.3%)	7 (29.2%)	5 (20.8%)	1 (4.2%)
6- Based on my experience, patients with stroke like using Telehealth	4 (16.7%)	4 (16.7%)	10 (41.7%)	4 (16.7%)	2 (8.3%)
7- If I were a patient with stroke, I would like to use Telehealth	6 (25%)	8 (33.3%)	5 (20.8%)	3 (12.5%)	2 (8.3%)

Table (2): Count.

Domains and items	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
<i>Beliefs domain:</i>					
1- I trust that patients are using Telehealth equipment effectively	4 (16.7%)	7 (29.2%)	9 (37.5%)	3 (12.5%)	1 (4.2%)
2- I trust that transmitted information from patients with stroke via Telehealth is reliable	5 (20.8%)	8 (33.3%)	9 (37.5%)	2 (8.3%)	0 (0%)
3- Telehealth ensures the confidentiality of my patients' information	6 (25%)	13 (54.2%)	4 (16.7%)	1 (4.2%)	0 (0%)
4- Telehealth is an acceptable method to monitor specific outcomes of patients with stroke	5 (20.8%)	14 (58.3%)	4 (16.7%)	0 (0%)	1 (4.2%)
5- Telehealth is a good facilitator to provide effective care for patients with stroke	5 (20.8%)	12 (50%)	7 (29.2%)	0 (0%)	0 (0%)
6- I can follow-up (reassess) patients with stroke using Telehealth	5 (20.8%)	8 (33.3%)	5 (20.8%)	5 (20.8%)	1(4.2%)
7- I know when to stop using Telehealth services with patients with stroke	14 (58.3%)	7 (29.2%)	0 (0%)	3 (12.5%)	0 (0%)
8- Telehealth improves my practice	6 (25%)	7 (29.2%)	7 (29.2%)	4 (16.7%)	0 (0%)
9- The use of Telehealth for patients with stroke helps me monitor my patients more rapidly	9 (37.5%)	11 (45.8%)	1 (4.2%)	2 (8.3%)	1 (4.2%)
10- The use of Telehealth for patients with stroke implied major modifications in my clinical practice	8 (33.3%)	9 (37.5%)	4 (16.7%)	3 (12.5%)	0 (0%)
11- My workplace has sufficient technology and structure to support Telehealth	7 (29.2%)	6 (25%)	3 (12.5%)	7 (29.2%)	1 (4.2%)
12- I think it is a good idea to use Telehealth to monitor my patients with stroke	8 (33.3%)	13 (54.2%)	3 (12.5%)	0 (0%)	0 (0%)
<i>Training domain:</i>					
1- I would like to receive more training on Telehealth	13 (54.2%)	9 (37.5%)	0 (0%)	1 (4.2%)	1 (4.2%)
2- I feel like I have been sufficiently trained to use Telehealth effectively	5 (20.8%)	9 (37.5%)	5 (20.8%)	4 (16.7%)	1 (4.2%)
3- I feel comfortable training patients with stroke on how to use Telehealth systems independently.	6 (25%)	12 (50%)	2 (8.3%)	4 (16.7%)	0 (0%)
4- I feel comfortable to train peers and colleagues on using Telehealth	11 (45.8%)	7 (29.2%)	3 (12.5%)	2 (8.3%)	1 (4.2%)

Participants reported a variety of barriers that prevent OTs from adopting telehealth for patients with stroke in clinical settings, as shown in Fig. (1). The most common barrier among all participants (n=50) was the lack of patient cooperation with using Telehealth (66%), followed by lack of necessary equipment to optimise Telehealth functionality (52%), lack of technical support (48%), lack

of time/busy schedule (38%), lack of knowledge about the Telehealth benefits (36%), poor internet connection and lack of trained staff (24%), lack of stakeholder support (32%), lack of expert support (24%), high cost (28%), lack of adequate roles, regulation and guidelines for implementation (22%), and negative outcome expectation as the least common barrier (18%).

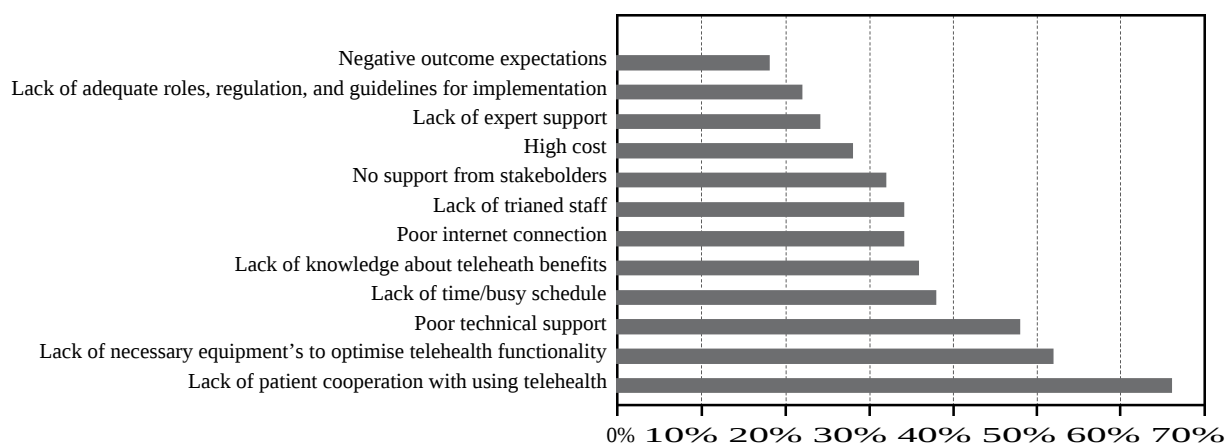


Fig. (1): Illustrates the barriers to telehealth adoption among occupational therapists working with stroke patients in Saudi Arabia (n = 50).

Discussion

This study provides a comprehensive and valuable insight into the current utilisation, perceptions, and barriers surrounding telehealth for patients with stroke among OTs in private and governmental sectors.

A total of 50 OTs participated in the study survey, of which 24 reported using telehealth with stroke patients in their practice.

Awareness/Knowledge Domain:

Telehealth has the potential to enhance stroke treatment and improve daily life activities among stroke survivors with advances in communication technology [11]. This is reflected positively in the telehealth user participants of this study, where the majority (70.8%) agreed that telehealth is a useful application in occupational therapy and enhances healthcare quality and delivery for stroke patients. However, 41.7% agreed that telehealth is easy to use with patients, highlighting usability challenges that require attention. This aligns with previous studies showing that telehealth improves access to services, increases patient engagement, enables better monitoring of progress, and enhances the quality of life for stroke survivors [12,13,14].

Evidence from Saudi OTs during the COVID-19 pandemic further supports these results, emphasising telehealth's role in minimising delays, reducing travel expenses, and saving time for both patients and therapists [15]. This evidence suggests a growing recognition among Saudi OTs of the benefits of telehealth and a willingness to adopt it to improve service accessibility.

Attitude Domain:

The findings within the attitude domain further support the growing acceptance of telehealth among occupational therapists. A high proportion of telehealth user participants (83.4%) indicated their intention to continue utilising telehealth with stroke patients when appropriate. Moreover, 62.5% expressed comfort with the underlying information and communication technologies employed in telehealth. 58.3% of telehealth user participants would recommend it to their patients, demonstrating a strong willingness to promote its adoption. These findings are consistent with a study conducted in Kuwait, a country with a healthcare system similar to that of Saudi Arabia, which also reported positive attitudes among healthcare professionals towards telerehabilitation, recognising its potential to improve access to rehabilitation services for individuals with disabilities [16].

Practice Domain:

In this domain, participants expressed their opinions about the practice of telehealth with stroke patients from different angles. It showed that for the majority of the participants, telehealth changed their work routine and enabled them to have quick access to the patient's information. This positive feedback is aligned with the findings of Cho et al. [17], where therapists utilising telerehabilitation reported a high perception of its usefulness. However, not all participants reported consistent telehealth use in their settings. These contextual factors are supported by Nix and Comans [18], who reported that healthcare policies and procedures on technology use can hinder the implementation of telerehabilitation and potentially interfere with operational efficiency.

Another key finding is the variation in participants' responses regarding patients' acceptance and preference for telehealth. This can be explained by many factors. First is the overall impact of stroke on the patients in terms of cognition and function, which can determine the patients' preference for using telehealth. Second, not all stroke patients are the same, and individual differences can alter their choice between regular service and telehealth [5].

The other key finding is that the majority agree that telehealth is useful for transportation challenges. This is in line with many studies where telehealth has been perceived as a valuable tool for patients facing transportation difficulties, offering significant benefits in time savings, reduced travel burdens, and increased efficiency [9,19].

Belief Domain:

This study explored participants' beliefs of telehealth's potential, focusing on two key aspects: Its effectiveness and the maintenance of patient confidentiality during remote monitoring. Participants responded to 12 comprehensive questions designed to elicit their beliefs regarding these areas, particularly in the context of stroke patient care. The first set of questions investigated the perceived effectiveness and reliability of telehealth for patients with stroke. While the majority of participants expressed strong agreement regarding its efficacy, the existing literature presents more mixed views. For instance, Sánchez et al. [20] found that constraint-induced movement therapy (CIMT) in stroke patients using telerehabilitation is not superior to traditional CIMT in improving upper extremity motor function in chronic stroke patients, suggesting limited effectiveness compared to conventional rehabilitation approaches. In contrast, Saygili et al. [21] reported improved upper extremity motor functions and activities of daily living in stroke patients using CMIT telerehabilitation. This discrepancy in findings may stem from methodological variations across studies. These differences may reflect variations in study design, technologies used, and patient populations, which complicate direct comparisons and limit generalisability.

Participants expressed substantial confidence in telehealth's ability to protect patient confidentiality. Specifically, 79.2% agreed that telehealth maintains the confidentiality of patient information, and a nearly identical proportion (79.1%) considered it an acceptable method for monitoring specific outcomes in stroke patients. A slightly smaller majority (70.8%) believed that telehealth facilitates effective care, further indicating generally positive perceptions of its utility. These findings align with

other local and international studies examining similar outcomes, despite variations in contextual backgrounds. These findings are consistent with other studies reporting strong belief in the effectiveness and quality of telehealth. For example, Phenicie et al. [22] found that most participants believed the quality of telehealth services was comparable to in-person care, and similarly, Cramer et al. [23] showed that telerehabilitation could be as effective as in-clinic care in improving motor function and patient knowledge about stroke.

Training Domain:

The training domain of this survey revealed key insights into the professional development needs of OTs in Saudi Arabia regarding telehealth. A striking 91% of telehealth user participants expressed a desire for additional telehealth training, underscoring the perceived importance of these skills, particularly within stroke rehabilitation. This demand likely reflects the accelerated integration of telehealth into practice, driven in part by the COVID-19 pandemic, and a corresponding need among OTs to enhance their competencies with evolving technologies (Alharbi, 2023; Alghamdi et al., 2022; Abbott-Gaffney et al., 2022) [9,24,25].

A seemingly paradoxical finding emerged regarding the perceived sufficiency of existing training. While a substantial majority (57%) of telehealth user participants felt their current training was adequate, the overwhelming desire for additional training suggests a significant gap between perceived competence and desired proficiency. This discrepancy likely indicates that current training programs, while perhaps providing a foundational understanding, may not fully address the specialised needs of OTs engaged in telerehabilitation, particularly for complex cases like stroke rehabilitation [8]. This highlights the urgent need for more structured, hands-on, and continuous professional development focused on telehealth tools, best practices, and adaptations for diverse patient populations, including those with complex needs such as stroke survivors [26].

Despite the recognised need for further training, a noteworthy finding was the high level of confidence among OTs in their ability to train others. Over 75% of telehealth user participants reported feeling comfortable training both stroke patients and their peers on telehealth systems. This result suggests that OTs are not only receptive to learning but also possess a strong willingness and capacity to share their knowledge. This potential for peer-to-peer training could be a valuable asset in accelerating telehealth adoption across the profession,

leveraging the established trust OTs have within their professional networks [27]. This willingness to share expertise may also reflect a broader trend towards collaborative learning within the healthcare community, potentially mitigating some of the challenges associated with technology adoption [14].

However, this confidence in training others should not overshadow the demonstrated need for enhanced training programmes. While OTs may feel comfortable with certain aspects of telehealth, the complexities of its effectiveness for stroke patients necessitate ongoing professional development. Research consistently demonstrates that comprehensive training, encompassing technical support and tailored guidance on remote patient engagement, is crucial for successful telehealth implementation [9,15]. Specifically, developing training programs that address the unique challenges of telerehabilitation, such as adapting therapeutic techniques to virtual environments and managing patient engagement remotely, could empower OTs to use it more effectively and confidently [8,13].

Barriers:

Several barriers emerged as potential hindrances to the widespread adoption of telehealth by OTs within Saudi Arabia's healthcare system. Patient cooperation with telehealth emerged as a primary concern. This challenge may stem from various factors, such as patient familiarity with technology or access to reliable internet [16,28].

Beyond patient-related challenges, logistical barriers also presented significant obstacles. These included, in descending order of reported frequency: access to necessary equipment, availability of technical support, scheduling constraints, inconsistent internet connectivity, cost considerations, and a lack of clear application guidelines. The broad scope of these logistical challenges suggests that there must be a comprehensive approach to infrastructure development and resource allocation to support telehealth implementation.

Finally, training-related barriers were also identified. These encompassed perceived inadequacies in existing telehealth knowledge, a general lack of comprehensive training opportunities, insufficient support from stakeholders, and limited access to expert consultation. These findings suggest a need for targeted professional development initiatives to equip OTs with the skills and confidence necessary for effective telehealth practice.

These findings resonate with previous research highlighting both internal and external barriers to

successful telehealth implementation [24,26]. Internal barriers, such as resistance to change and communication challenges, have been widely documented, as have external barriers, including technological limitations and organisational support.

A global perspective is provided by Abbott-Gaffney et al. (2022), who investigated telehealth use among OTs during the early stages of the COVID-19 pandemic [25]. Their study, involving 193 OTs from 13 countries, identified limited access to materials, technological difficulties, and challenges in collaborating with carers or e-helpers as key barriers. These challenges, in turn, negatively impacted practitioners' confidence in using telehealth. The study also highlighted the proactive strategies employed by OTs to overcome these barriers, including seeking organisational training, using social media for support, engaging in self-directed learning, and participating in online webinars.

Appleby et al. (2019) offered a framework for implementing telehealth for stroke patients, emphasising the importance of dedicated resources and infrastructure (equipment, networks, and training), specialised training, ongoing support for health professionals, and consideration of patient perspectives and preferences [29]. These recommendations align with the findings of the present study, which call for a multi-pronged approach to address the complex challenges of telehealth implementation.

To facilitate more effective telehealth in Saudi Arabia, healthcare institutions and policymakers should prioritise investments in technological infrastructure, comprehensive training and support programmes for both OTs and patients and the development of clear guidelines and regulations for its utilisation. Addressing patient cooperation concerns may necessitate public awareness campaigns to promote the acceptance of telehealth among stroke patients and their carers.

Future implication:

The findings of this research hold significant implications for the future development and implementation of telehealth services in occupational therapy practice. The demonstrated high awareness, positive attitudes, and recognition of telehealth's benefits among OTs provide a strong foundation for expanding its utilisation. However, the identified barriers, particularly those related to patient cooperation, logistical support, and the need for enhanced training, must be addressed to ensure successful and sustainable implementation. Addressing these challenges will be crucial for re-

alising the full potential of telehealth in improving access to care and patient outcomes.

While this study focused on OTs' perceptions and experiences, it represents just one side of the telehealth landscape. Future research incorporating the perspectives of other key stakeholders, such as patients, carers, and healthcare administrators, would provide a more holistic understanding of the challenges and opportunities associated with the telehealth implementation.

Study Limitations:

This study, while offering valuable insights, is notably limited by its sample size. The sample size of OTs in Saudi Arabia, while substantial, may not fully represent the diverse perspectives and experiences of the entire OT workforce nationwide. This potential for limited representativeness may restrict the generalisability of the findings to the broader population of OTs in Saudi Arabia.

Conclusion:

OTs in Saudi Arabia utilise telehealth services, perceiving it as beneficial for improving care delivery to stroke patients. However, significant barriers, such as lack of equipment, technical support, and patient cooperation, must be addressed to increase the widespread awareness and usage of telehealth among OTs in the future. Overcoming these barriers is important to ensuring effective utilisation of telehealth in occupational therapy practice. By addressing these barriers, telehealth has the potential to enhance accessibility, efficiency, and patients' care in stroke rehabilitation.

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Research Ethics:

This study was ethically approved by the Institutional Review Board at King Saud University (No. E-24-9172). Informed written consent was obtained from all participants in the study, and all participants were asked to sign a consent form before participating. Additionally, consent was given by the primary developers of the questionnaire.

Consent to Participate:

Informed consent was obtained from all participants upon completing the survey.

Declaration of Conflicting Interests:

The authors report no conflicts of interest.

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Authors Contributions:

Mai Aldera (study design, principal investigator, data analysis and manuscript preparation), Ghadeer Alsubaie (data collection), Lamis Bin Ghasib (data collection), Rahaf Alqahtani (data collection), Raghad Alotibi (data collection), Asma Alderaa (data analysis and manuscript preparation), and Reem Aljermawi (data analysis and manuscript preparation).

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تصورات ومعوقات أخصائيين العلاج الوظيفي في استخدام الرعاية الصحية عن بعد مع مرضى السكتة الدماغية: دراسة مقطعية

الخلفية: يشهد استخدام الرعاية الصحية عن بُعد تزايداً بين أخصائيين العلاج الوظيفي. هدفت الدراسة الحالية إلى استكشاف معدلات استخدام الرعاية الصحية عن بُعد، ومواقف الأخصائيين تجاهه، وانطباعاتهم عنه عند التعامل مع مرضى السكتة الدماغية، مع تحديد أبرز العوائق التي تحول دون تطبيقه.

المنهجية: استخدمت الدراسة استبياناً إلكترونياً، وتم تطبيق طريقتي العينة غير الاحتمالية (المتاحة) و«كرة الثلج» في اختيار المشاركين من خلال عضوية الجمعية السعودية للعلاج الوظيفي. أجاب المشاركون أولاً على أسئلة ديموغرافية وبيّنوا ما إذا كانوا يقدمون خدمات الرعاية الصحية عن بُعد لمرضى السكتة الدماغية في جهات حكومية أو خاصة. من أجاب بـ «نعم» انتقل للإجابة على الاستبانة كاملة، بينما تم توجيه من أجاب بـ «لا» إلى قسم العوائق فقط، مع اقتصار المشاركة على من لديهم خبرة لا تقل عن سنتين.

النتائج: شارك في الدراسة ٥٠ أخصائي علاج وظيفي، أفاد ٢٤ منهم (٤٨٪) باستخدامهم للرعاية الصحية عن بُعد مع مرضى السكتة الدماغية، وأشار أكثر من ٧٠٪ إلى فائدتها في تعزيز جودة خدمات العلاج الوظيفي، وعبر ٨٠٪ عن اقتناعهم بفاعلية استخدامها مع هذه الفئة من المرضى. كما أبدى ٧٩,٢٪ الثقة في الحفاظ على سرية المعلومات، بينما أظهرت الجوانب الأخرى من البعد المتعلق بالمعتقدات مستويات اتفاق أقل؛ إذ عبر ٥٤,٢٪ عن ثقتهم في موثوقية المعلومات المنقولة، ورأى ٤٥,٨٪ أن المرضى قادرون على استخدام الأجهزة بشكل مستقل. من جهة أخرى، أشار المشاركون إلى عدة عوائق تحد من استخدامها، أبرزها: عدم تعاون المرضى (٦٦٪)، نقص التجهيزات (٥٢٪)، ضعف الدعم الفني (٤٨٪)، وضيق الوقت (٣٨٪).

الاستنتاج: تُظهر هذه الدراسة وجود توجه إيجابي نحو الرعاية الصحية عن بُعد بين أخصائيين العلاج الوظيفي. ومع ذلك، فإن التغلب على العوائق المحددة، مثل ضمان توفر الأجهزة، والدعم الفني، وتقديم تدريب شامل، يُعد أمراً بالغ الأهمية لضمان نجاح تطبيقه في مجال إعادة التأهيل بعد السكتة الدماغية.