RESEARCH ARTICLE

Online conferencing platforms as operational tools by health professionals: A pilot study

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Abstract: Due to the COVID-19 pandemic, health professionals provided their services online or by telephone. The science of telemedicine is helping to reduce social inequalities, improve health services, and support patients with chronic diseases regardless of geographic location, income, or educational level. This study aimed to investigate the degree of familiarity, skills, and satisfaction of health professionals with the provision of telehealth – the use of remote therapies in times of emergency, such as a pandemic. The analysis of the results showed that although health professionals feel familiar with the electronic platforms for teleconferencing, they need training and technical support to automate their electronic services to become as functional as the face-to-face sessions. The study contributed by identifying limited knowledge regarding the credentials and potentials of online teleconferencing systems on behalf of health experts.

Keywords: telehealth, telemedicine, online session, health professions, distance session, eHealth, pandemic

1 Introduction

Telemedicine refers to the use of telecommunication technologies and systems in order to provide clinical healthcare services. In contrast, telehealth is a broader term that can refer to clinical and non-clinical services (Brunton et al., 2021). Patients consult health professionals through real-time online electronic programs (platforms) (Bokolo, 2021), a system that requires a computer with a camera, an internet connection and a video chat application. Despite the technological applications, most therapists have combined telephone communication with visual (video) communication to provide teleconferencing (Rozga et al., 2021).

Telemedicine has facilitated specialized care for patients living in remote areas (Cataldo et al., 2021) while reducing medical mask waste (Bokolo, 2021), contributing to waste control, a more frugal lifestyle, and respect for the environment.

Regarding the importance of the paper, we could say that it aspires to contribute to the research of telemedicine and telemedicine applications that can be adopted in times of emergency as convenient, safe, scalable, effective, and green methods of providing clinical care. According to previous studies, younger health providers are well aware (Ahmed et al., 2021; Elhadi et al., 2021) and optimistic about establishing telemedicine as an alternative therapy protocol in the following years (Ahmed et al., 2021; Nies et al., 2021). Clinicians have evaluated general factors regarding the implementation of the telemedicine platform in clinical practice (Miner et al., 2021; Samples et al., 2021). Personal unique characteristics influence their adaptability (Miner et al., 2021). In the majority of the studies, online health services are well accepted by patients (Cataldo et al., 2021; Nanda & Sharma, 2021; Miller et al., 2021). However, it is unknown whether clinicians are adjusted and ready to exploit these online platforms' conveniences fully. Evaluating prohibitive issues faced by health professionals will benefit to maximum their teleconferencing session and may guarantee the platform's long term clinical value.

2 Literature review

A review study mentions several online conferencing platforms, which can be used for remote sessions (Perisetti & Goyal, 2021). Among these: Zoom, Zoom for Health Care, Cisco Webex meetings (Perisetti & Goyal, 2021; Rozga et al., 2021), Apple Face Time, Skype, Facebook messenger video chat, Google Hangouts video and various others (e.g., eVisit, SecureTelehealth) have been reported (Perisetti & Goyal, 2021; Farid, 2020; Armakolas & Panagiotakopoulos,

2020; Rozga et al., 2021). What is essential, though, is that these electronic platforms are compatible with ethical rules for patients and healthcare providers (Perisetti & Goyal, 2021) and provide communication-collaboration capabilities (Armakolas et al., 2021).

The specialities that make greater use of computer-based sessions are where meetings between the health provider and patient are relatively frequent and uninterrupted. Examples of such professions are speech and language therapists, occupational therapists, dieticians, and psychologists. Sessions in these professions last 30 to 45 minutes, and the frequency of sessions is once or twice a week.

Speech and language therapists provide assessment and rehabilitation services for various conditions such as childhood language disorders, neurogenic language disorders, neurogenic speech disorders, fluency disorders and vocal disorders (Almudhi, 2021). Early identification and intervention is always the key to providing adequate care for people with speech and language impairments (Mashima & Doarn, 2008; Fernandes et al., 2020). The cessation of similar activities to limit the spread of COVID-19 has made it difficult for people to reach speech and hearing professionals (Yuen et al., 2021). According to 25 Miller et al., 2021 research, several patients stated that they would watch teleconferences in case of emergency in order not to interrupt their sessions (Miller et al., 2021). Thus, it was essential to adopt alternative means to meet the needs of patients (Molini-Avejonas et al., 2015).

Occupational therapists, as health professionals, aim to maximize the degree of the person's daily functioning, i.e., more specifically, the person's developmental skills and prevention of any impairments so that the person can be autonomous and can carry out his/her daily activities without external assistance. Occupational therapy helps significantly in the neurological recovery of patients (Sarsak, 2020).

Telehealth has also benefited the psychology profession, where treatment includes diagnostic interviews, assessment and supervision (Dopp et al., 2021). Telehealth can provide mental health services online and help address the feelings of isolation, anxiety, exhaustion and depression experienced by patients. Consequently, it can boost their self-confidence and self-esteem while protecting them from COVID-19 infection (Monaghesh & Hajizaden, 2020).

Another speciality that uses the telesession is that of dieticians - nutritionists. The advantages of telesession for a nutritionist include the possibility of "exploring" the patient's fridge/supplies (Brunton et al., 2021) and the observation of a person's feeding habits, especially if they are children (Mehta et al., 2020). Regarding patients better quality of life (De Groot et al., 2021) is mentioned. Besides, better compliance to treatment (Brunton et al., 2021) for neurological (Wood et al., 2021) and kidney diseases (Kalantar-Zadeh & Moore, 2020) or malnutrition (Marx et al., 2018) issues are easier resolved. Another review study showed that the imposition of telesession in patients with chronic diseases contributed to a reduction in body weight and abdominal circumference, improved cardiovascular markers, improved physical activity, and established a healthy diet (Kelly et al., 2020).

General use of telemedicine among clinicians depends on their comforts to one high technological environment (Miner et al., 2021), their digital awareness or skills (Elhadi et al., 2021), their anxiety about patients technological equipped level (Samples et al., 2021; Nies et al., 2021) as well as to the provided clinical care (Nies et al., 2021).

Some of the disadvantages of a teleconference are the necessity of technological equipment, the need for specialized training, the difficulty of treatment compliance by a portion of patients, as well as various other technical issues such as regulations, terms of operation and financial issues that need to be determined (Zughni et al., 2020; Armakolas et al., 2018). Also, online sessions for both therapist and client are likely to be more stressful than face-to-face sessions. Being aware that vital information such as body language (Cataldo et al., 2021) is lost during the session, it is not surprising that many parents and caregivers are still skeptical of this new mode of therapy and experience difficulties in engaging with their therapists (Aggarwal et al., 2020).

The disadvantages of teleconferencing also include the therapist's difficulty to conduct a clinical examination, the unclear limits on payment, the additional time the healthcare requires prior to the appointment, e.g., the informative material sent to the patient in advance. Additionally, the possible intrusion of other family members during the therapy protocol, especially if the patient is unaware of technological education, and finally, the possible prior communication with the patient to resolve telesession issues (Brunton et al., 2021). However, conducting a face-to-face session is a therapeutic approach that allows patients to feel safety and intimacy, and as a result, their relationship with the therapists is strengthened. Consequently, the healing of psychological trauma occurs faster (Cataldo et al., 2021).

All the above technology mentioned has been in use for some time. However, other information technologies are slowly gaining ground and are expected to play an essential role in distance education soon (Tzimopoulos et al., 2021).

Researchers still believe that mobile phones can increase opportunities globally by removing the barriers to anywhere and anytime learning (Altbach et al., 2019). Access to internet technologies through mobile devices is becoming increasingly easy and accessible to everyone. Therefore, internet-based communication is widespread (Psycharis, 2006; Armakolas et al., 2021; Papadakis, 2021). Online cyberspace can support communication and interaction at distinct levels through various tools. All participants can develop an intense sense of presence because they will feel comfortable and calm. The use of teleconferencing can create new possibilities and contribute significantly to the development of the social skills of the participants, to the cultivation of a spirit of cooperation and active participation (Armakolas et al., 2018; Katsaris & Vidakis, 2021; Armakolas et al., 2021). However, there is still a literature gap about whether clinicians will utilize mobile advances to facilitate their everyday clinical service.

3   Purpose and research questions

This work is part of a more extensive study – a pilot study. In this study, the survey is the appropriate methodological choice to explore the attitudes and views of health professionals due to working changes, from face-to-face sessions to remote sessions, as a result of the COVID-19 pandemic. The resulting findings will provide a basis for further research, education, training, information, knowledge and development of health professionals to practice their remote profession more effectively. The following study will attempt to answer the following questions:

(1) How do therapists evaluate their degree of familiarity with online conferencing platforms?

(2) How do therapists evaluate their skills in providing health services remotely?

(3) How do therapists evaluate their satisfaction concerning practising their profession through teleconferencing?

4   Methods

The first stage of the research focused on relevant literature from Greek and foreign sources based on published studies. The main research subjects were: telemedicine and telehealth during the COVID-19 pandemic. The keywords that were used in the search were "telemedicine", "eHealth", "telehealth", "remote medicine", "COVID-19", "coronavirus 2019", and "pandemic". Additionally, since the area of professional expertise of the students refers to the science of speech and language therapy (logotherapy), as well as nutrition - diet, respectively, the following keywords were also used: "nutritionist", "dietitian", "speech therapist". A secondary objective referred to the evaluation of data about the preparation time, any technical difficulties encountered, and finally, an assessment of the ongoing treatment. Likert scale was chosen as most appropriate to study these variables.

The research sample is composed of health professionals. The term "health professionals" included medics and paramedics who could monitor treatment or provide counselling through the internet or telephone. In the context of this research, professional psychologists, speech, and language therapists (logotherapists), nutritionists - dietitians, occupational therapists, and special education teachers were considered to fulfil the above criteria.

This study was conducted in the period from March – April 2021. Health professionals were asked closed-ended questions about their demographic data along with one open-ended question about their specialty. In addition, Likert-scale questions were used to ensure that the structure of this questionnaire referred to the attitudes of therapists towards telehealth, as well as any challenges that they faced and addressed, the experience of earlier researchers was utilized (Aggarwal et al., 2020; Rozga et al., 2021). Participants were asked to respond to the electronic questionnaire designed with the help of Google Forms to collect the data. The questionnaire was posted on both the associations and societies of the corresponding professionals and social media. Before posting it, five (5) health professionals completed it as a pilot project to identify any ambiguities and errors that could cause problems both while carrying out research and in the results.

5   Results

Results were analyzed with an excel program. The results were expressed in terms of the number of participants for the descriptive variables of the sample (age, gender, education, years of working experience) and the per cent % analysis for each variable examined. Thirty-nine questionnaires were distributed online and completed electronically as part of the survey.

The majority of the participants were women (76.9%), while a much smaller percentage were men (23.1%). The percentage of men compared to women was lower because, in the specialities targeted by the survey, a higher percentage of professionals are women than men, so there was difficulty in collecting a male sample. Regarding the age of the participants, 51.3% were aged between 31 and 40 years, 30.8% were aged 40-55 years, 15.4% were aged 22 to 30 years old, and 2.6% were aged over 55 years old. In terms of working experience, the most significant percentage of participants (51.3%) worked 10 to 20 years, working experience 6 to 10 years (23.1%), up to 5 years (15.4%) and more than 20 years of experience was responded by 10.3% of the participants. Regarding the participants' specialty, nutritionists-dieticians and speech therapists (38.5%, each one) gave the highest percentage of responses. A smaller percentage of respondents were psychologists, 7.7%, occupational therapists, 5.1%, special educators, 2.1%, school nurses 2.6% and social workers 2.6%. Regarding education level, the most significant percentage of participants had a university degree, 59.5%, 37.8% of participants had a master's degree, and 2.7% had a doctorate. (Table 1).

Table 1   Descriptive variables of health participants

	Participants (n)	Percentage (%)
Gender		
Men	9	23.1
Women	30	76.9
Age (years)		
22–30	6	15.4
31–39	12	51.3
40–55	2	30.8
> 55	1	2.6
Working Experience (years)		
up to 5	6	15.4
6–10	9	23.1
10–20	20	51.3
> 20	4	10.3
Specialty		
Dietitian – Nutritionist	15	38.5
Social worker	2	2.6
Occupational therapist	2	5.1
Speech therapist	15	38.5
Special needs educator	1	2.6
School nurse	1	2.6
Psychologist	3	7.7
Education Level		
Bachelor	22	59.5
Master	14	37.8
PhD	1	2.7

It is described the familiarity that health professionals had with remote consultation and the platforms which provided this facility. A reasonably high percentage felt familiar with these platforms (agree 38.5%, strongly agree 23.1%). However, preparation (agree 33.3%, strongly agree 28.2%) and sending of treatment material to the patient were required (41% agree, 12.8% strongly agree) (Table 2).

Table 2   Results from statements, n (%) regarding the degree of familiarity of the participants with online teleconferencing platforms

	Totally Disagree n (%)	Disagree n (%)	Neither agree nor disagree n (%)	Agree n (%)	Totally agree n (%)
I feel familiar with the online conferencing platforms for practicing my profession's services	1 (2.6)	4 (10.3)	10 (25.6)	15 (38.5)	9 (23.1)
Need more preparation for the online session compared to the face-to face session	9 (23.1)	2 (5.1)	4 (10.3)	13 (33.3)	11 (28.2)
For the provision of my e-session, I consider it a prerequisite to have sent in advance to the patient material about the telesession	2 (5.1)	7 (17.9)	9 (23.1)	16 (41)	5 (12.8)

The results showed that the interaction between the therapist and during distance therapy changed significantly (totally disagree 34.2%, disagree 39,5%). Appropriate planning and organization are needed to provide the telesession (agree 46.2%, strongly agree 15.4%). In addition, quite a large number of the participants agreed that additional technical support is

necessary to achieve the quality of the face-to-face session, and they would like to know more online programs to facilitate the provision of the telesession (Table 3).

Table 3   Results of statements, n (%) regarding the therapists' skills in remote sessions

	Totally Disagree n (%)	Disagree n (%)	Neither agree nor disagree n (%)	Agree n (%)	Totally agree n (%)
Interaction with the patient does not show any difference compared to the face-to-face session	14 (34.2)	15 (39.5)	9 (23.7)	1 (2.6)	0 (0)
It is required appropriate planning and organization of distance counselling	1 (2.6)	5 (12.8)	9 (23.1)	18 (46.2)	6 (15.4)
Need more technical support to deliver my distance services the same way as in the face-to-face session.	5 (12.8)	7 (17.9)	5 (12.8)	18 (46.2)	4 (10.3)
Want to be aware of more online programs to practice my distance session the same way as my face-to-face sessions.	4 (10.3)	4 (10.3)	9 (23.1)	17 (43.6)	5 (12.8)

It was seen that there was not the same intimacy between therapist and patient as in the face-to-face session (agree 23.1%, strongly agree 2.6%), but therapists prefer this mode of therapy (28.2% and 5.1%) because it is a safer treatment in terms of infections. However, this change did not affect the cost of their services. Finally, therapists are willing to undergo training to develop their services in an online way (Table 4).

Table 4   Therapists' satisfaction with remote treatment (n, %)

	Totally Disagree n (%)	Disagree n (%)	Neither agree nor disagree n (%)	Agree n (%)	Totally agree n (%)
There was the same intimacy/cooperation between therapist and patient as in the face-to-face session .	8 (20,5)	12 (30,8)	9 (23,1)	9 (23,1)	1 (2,6)
Because of the telesession, I found it difficult to ask for the same amount of money from the patient.	5 (12,8)	14 (35,9)	8 (20,5)	8 (20,5)	4 (10,3)
Willing to be trained on the services offered by telemedicine for the development of my service.	3 (7,7)	3 (7,7)	6 (15,4)	18 (46,2)	9 (23,1)
Prefer teleconferencing because I am in a safer (in terms of infections) environment.	3 (7,7)	12 (30,8)	11 (28,2)	11 (28,2)	2 (5,1)

6   Discussion

The study's objective was to investigate therapists' degree of familiarity, preference, and preparation in teleconferencing services while practicing their profession. Regarding the first research question that refers to the degree of familiarity of the therapists with online platforms, a high percentage of the health professionals who responded to the survey agreed that they feel familiar with online conferencing platforms during a remote session. This finding was also observed in an earlier study (Molini-Avejonas et al., 2015). Most of the participants, with a few exceptions, believe that they have the necessary skills for teleconferencing and did not need any further training to implement it, and this finding has also been discovered by other researchers (Aggarwal et al., 2020). Similarly, a high level of awareness and knowledge about telemedicine has been reported (Elhadi et al., 2021), especially for the younger professionals (Nies et al., 2021). However, they report needing more preparation to provide teleconferencing than in a face-to-face session. They also argue that they had sent the material to the person under treatment in advance. This finding contradicts the critical advantages of the science of telemedicine (Bokolo, 2021; Brunton et al., 2021).

Furthermore, electronic software, especially in the science of speech and language therapy (logotherapy), can effectively reduce the therapist's preparation time (Furlong et al., 2017). The findings could be justified by an earlier study (2018), according to which nutritionists were not prepared to use telemedicine applications to practice their profession (Maunder et al., 2018). More specifically, the researchers demonstrated that although access to online services and the digital skills of nutritionists have improved, they failed to take advantage of digital applications (Maunder et al., 2018). American health professionals were more likely to use technological applications through their mobile phones to evaluate nutritional intake than health professionals in Europe (Vasiloglou et al., 2020). Although there was not any question

about the nationality/origin of the participants, since the questionnaire was targeted to Greek associations/societies and Greek health professionals, this may also explain the difficulty that the therapists faced in managing the teleconferencing process, and the fact that they needed more time to prepare it.

Regarding the second research question that refers to the therapists' skills, the most significant findings from this paper are the therapists' statements about the proper planning of a remote session and the need for technical support and training on online software. According to the literature on the successful provision of a remote session, therapists need to be well prepared and familiar with online patient medical histories, and clearly defined treatment goals should be set, and retesting should be scheduled (Farid, 2020). As it can also be found out through a systematic literature review, health professionals need to be trained to be able to "digitize" their skills in clinical practice (Konttila et al., 2018). Moreover, the willingness to use innovative technology in their job results from their earlier experience and beliefs (Konttila et al., 2018). To most of the studies, clinicians feel aware and capable of transferring their service online (Ahmed et al., 2021; Elhadi et al., 2021; Nies et al., 2021; Miner et al., 2021). In addition, therapists can find differences in the interaction with the person under treatment through teleconferencing compared with the face-to-face session. Similarly, in the paper of Rozga et al. (2021), it is reported that the main obstacles in the provision of teleconferencing by professional nutritionists were the refusal of the patients to take part in teleconferencing and difficulty to implement nutritional evaluation remotely, combined with the technical difficulties that patients encountered.

Regarding the third research question that refers to the therapists' satisfaction, most therapists report that there was not the same degree of familiarity between the therapist and the patient as in a face-to-face session. As opposed to the paper of Wood et al. (2021), where the highest percentage of patients showed satisfaction with the provision of teleconferencing, which was as high as 97%, this paper did not discover any similar findings. However, the respondents in our study (20%) believe that a computer or smartphone cannot replace this type of treatment because this will hinder any interaction between the therapist and the patient due to the long distance between them (results not shown).

This paper concluded that therapists would like to grow their knowledge regarding the technological advantages offered by telemedicine and are also willing to receive further training on telemedicine services to be able to provide their professional services online. Continuous learning on awareness and proper utilization of digital tools will enhance telemedicine practice, and platforms should be paced with clinicians' personal, professional and clinical levels. Regarding the future use of teleconferencing, both the therapists and patients showed a strong preference for continuous use and agreed on telemedicine's potential to complement regular healthcare services, even after the pandemic (Nanda & Sharma, 2021). At the same time, a high percentage of the respondents in the study have already thought of getting equipped with an application, smart gadget, or other equipment to be able to improve their professional practice by making use of technology (results not shown). These findings show that therapists have realized the importance of their professional development in a highly technological - online world. This finding is of special importance, and it can be combined with the respondents' opinion that patients will continue to request sessions in person.

A high proportion of the participants use remote sessions on Skype, while a high percentage use Zoom, telephone and video calls, and Viber (results not shown), which agrees with the findings of relevant research (Bokolo, 2021). However, according to Bokolo (2021), health professionals abroad use other platforms, as well, which have not become popular in Greece yet, such as Google Duo, FaceTime, or Zoom for Healthcare (Rozga et al., 2021). According to researchers (Nanda & Sharma, 2021), therapists were concerned about their health during the pandemic and agreed they would have rescheduled their healthcare services if the telemedicine choice was unavailable. In our research, a relatively high percentage of the participants agreed that they feel better protected from infections when they work remotely. However, a reasonably high proportion of therapists believe that individual face-to-face sessions do not involve the risk of transmitting any infections, provided that the necessary protection measures are applied. Therefore, a large number of participants were either negative or neutral.

Health professionals in this survey agreed that the elderly found it more challenging to complete the session on a technical level and use each platform. According to earlier research (Nanda & Sharma, 2021), the elderly needs added technical support in order to be able to complete a remote session and also someone to help them during the session. In addition to the elderly, children also find it difficult to use computers and attend sessions, and other age groups do not face difficulties (results not shown).

Besides, as is also reported by Barbosa et al. 2020, only 40% of the parents were punctual about their children's sessions when it comes to individual remote sessions. In this research as well, when the respondents were asked about the cancellations that they had, compared to

sessions in person, the highest percentage of them answered that, although there were a lot of cancellations, a relatively high proportion of them were not characterized by any changes in the quantity and quality of their sessions (results not shown). Hence, according to Barbosa et al. (2020), differences could be identified in research findings regarding the quality of the sessions.

7   Conclusion

In the era of the COVID-19 epidemic, where social isolation and confinement was taken for granted, health therapists had to manage their patients by teleconference, i.e., by telephone or online monitoring. The results of this research study, where speech and language therapists and nutritionists have participated, showed that health professionals were familiar with and appropriate skills to provide a telesession.

However, most of them need more time to be prepared for the online session than the face-to-face session. They believe that proper planning and organization is required for counselling support for the distance session. They feel that they need more technical support to provide distance health services with the same way as the face-to-face session is conducted. They would like to know and are willing to be educated about telemedicine services. Compared to face-to-face sessions, they may work with interaction issues with their patients. However, no reduction in session costs was observed.

The present study's findings conclude that therapists seem familiar with the electronic platforms for the remote delivery of their services; however, further education and training in online programs is needed to automate their services and use their time more effectively. Addressing such issues could potentially optimize therapists' satisfaction with their profession. Our study contributed to a better understanding of the alertness and the adjustment of the clinicians to the new digital era. We suggest further training on the online teleconferencing facilities. Additionally, platforms evolution or development should be following each medical expertise's necessities. The results cannot be generalized due to the small sample size, while this paper is a part of a more extensive ongoing study.

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