



Outpatient speech and language therapy via videoconferencing in Germany during the COVID-19 pandemic: Experiences of therapists

Videotherapie in der ambulanten Logopädie/Sprachtherapie in Deutschland während der COVID-19 Pandemie: Erfahrungen von Therapeut/innen

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Abstract

During the COVID-19 pandemic, videoconferencing as a synchronous form of telepractice service delivery models received a boost. In Germany, online-only sessions are not a standardised means of healthcare provision, while telepractice is already well established internationally. This study examines videoconferencing in outpatient speech and language therapy during the first period of the COVID-19 pandemic in Germany. The experiences of therapists are reported in this study.

For this quantitative study, data were collected by an online survey. Speech and language therapists in Germany were surveyed (n = 816). Data were analysed using descriptive statistics.

The results demonstrated that 87% of participants used videoconferencing in the early days of the COVID-19 pandemic. Videoconferencing was conducted with patients of different ages and disorder indications. In their use of videoconferencing, 78% of therapists described benefits. The mentioned benefits and limitations are similar to international findings, showing the potential for synchronous speech and language therapy via videoconferencing. German therapists display a general acceptance of the sustainable use of videoconferencing, and the majority of therapists can imagine transferring videoconferencing to standard healthcare.

Abstract

Videotherapie als synchrone Form von Teletherapie bekam durch die COVID-19 Pandemie einen Schub. In Deutschland war Videotherapie in dieser Zeit keine Standardleistung der Gesetzlichen Krankenkassen, während sie international bereits gut etabliert ist. Die Studie untersucht Videotherapie während der ersten Zeit der Corona-Pandemie in der ambulanten logopädischen/sprachtherapeutischen Versorgung. In dieser quantitativen Querschnittserhebung wurden Logopäd/innen/Sprachtherapeut/innen (n = 816) in Deutschland mittels Onlinefragebogen befragt. Die Daten wurden deskriptiv anhand von Häufigkeitsverteilungen ausgewertet.

Die Ergebnisse zeigen, dass 87% der Teilnehmenden Videotherapie zu Beginn der COVID-19 Pandemie durchführten. Von den Therapeut/innen, die Videotherapie nutzten, sahen 78% darin Vorteile. Die Ergebnisse zeigen Übereinstimmungen mit den Erkenntnissen aus der internationalen Forschung. Die genannten Vorteile und Herausforderungen decken sich mit internationalen Erkenntnissen. Die Studie verdeutlicht das Potential von Videotherapie in der therapeutischen Versorgung. Die Therapeut/innen in Deutschland zeigen eine hohe Bereitschaft zur Weiterführung von Videotherapie in der Zukunft. Die Mehrheit der Therapeut/innen kann sich eine Überführung von Videotherapie in die Regelversorgung vorstellen.

Keywords

COVID-19 – telepractice – videoconferencing – speech-language therapy

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COVID-19 – Teletherapie – Videotherapie – Logopädie



INTRODUCTION

Telehealth services and the use of telepractice in the field of allied health professions are well established internationally. Nevertheless, COVID-19 created a worldwide surge in speech and language therapists using synchronous videoconferencing (ASHA, 2020). In Germany, however, videoconferencing is not a standard of health service delivery model. During the COVID-19 pandemic, the use of videoconferencing received a boost in speech and language therapy in Germany from the beginning. Initially, after contact restrictions were imposed, it was unclear whether therapy could take place at all, and if so, under what conditions. Because of contact restrictions, many patients did not come to their outpatient practices. In addition, many therapy sessions were cancelled because therapists had no access to nursing homes and day care centres. Therapists used videoconferencing to maintain needed therapeutic care. Many therapists in Germany had their first experience with videoconferencing during the COVID-19 pandemic. In March 2020, the Federal Joint Committee (G-BA) approved a preliminary permit to temporarily include videoconferencing in the healthcare provision (GKV Spitzenverband, 2021). Since September 1, 2022, videoconferencing can be provided within a transitional arrangement in Germany. At the time of writing (September 2022), proceedings are underway to determine the contract on the provision of speech and language therapy and its remuneration (dbl e. V., 2022). International reviews show that videoconferencing can be conducted with, among other groups, adults who have various speech, language, and voice disorders (Rangarathnam et al., 2016; Theodoros et al., 2019; Weidner & Lowman, 2020); children and adults who stutter (McGill et al., 2019); children with autism spectrum disorder and their parents (Sutherland et al., 2018); and children between four to twelve years old with speech or language disorders (Wales et al., 2017). Comparisons between speech and language therapy via videoconferencing and face-to-face therapy show similar outcomes (Coleman et al., 2015; McGill et al., 2019; Rangarathnam et al., 2016; Sutherland et al., 2018; Theodoros et al. 2019; Weidner & Lowman, 2020). Previous research reports benefits from the use of videoconferencing in speech and language therapy. Eliminating travel time and travel expenses, enabling therapy for non-mobile individuals, and allowing for a holistic view of individuals in their living environment, including social, health-related, and economic factors in patients' lives, are some of the benefits reported (Leinweber & Dockweiler, 2020; Rangarathnam et al., 2016; Sutherland et al., 2018; Theodoros et al., 2019; Wales et al., 2017).

The biggest hurdle for videoconferencing is a lack of network capacity leading to unstable internet connections (McGill et al., 2019; Weidner & Lowman, 2020). Even in urban areas, but especially in rural areas, unstable or insufficient internet connections result in poor to no sound or image transmission, limiting videoconferencing massively or making it impossible (Benda et al., 2020). Other challenges are reported on a personal level, which include problems of attention (Wales et al., 2017) and difficulties in implementing exercises involving children's parents while using videoconferencing (Sutherland et al., 2018).

However, patients and relatives are very satisfied with and show a high acceptance of videoconferencing. Patient satisfaction questionnaires have been used to collect information on audio-video quality, the online platform used, the method of therapy and its feasibility, the structure of the therapy session, comfort level, and symptom reduction (Coleman et al., 2015; McGill et al., 2019; Rangarathnam et al., 2016; Sutherland et al., 2018; Theodoros et al., 2019; Wales et al., 2017). Therapists also report increasing satisfaction with the implementation of videoconferencing in outpatient speech and language therapy (McGill et al., 2019).

Especially during the pandemic, research of videoconferencing has been initiated in Germany (Barthel et al., 2021; Beushausen & Sippel, 2021; Bilda et al., 2020; Bürkle et al., 2021; Mörsdorf & Beushausen, 2021). The study 'Videoconferencing in outpatient speech and language therapy' (ViTaL) — reported in this article — focused on the opportunity of videoconferencing during the first COVID-19 pandemic lockdown in the spring/summer of 2020. This study examined the use of videoconferencing in outpatient speech and language therapy and derived recommendations for this innovation in the German healthcare system. An online survey with 40 questions was distributed to explore how speech and language therapists implemented videoconferencing during the COVID-19 pandemic. The survey addressed the following research questions: (1) Is videoconferencing being used in the outpatient speech and language therapy at the beginning of the COVID-19 pandemic? and (2) If so, how and to what extent is videoconferencing being used at that time?

METHOD

The study report follows the CHERRIES reporting guidelines for reporting web-based surveys (Eysenbach, 2004).

Study design and participants

Within this quantitative study, data were collected cross-sectionally by an open online survey (SoSciSurvey



GmbH). In this random sample, the only inclusion criterion was that respondents provided speech and language therapy service in the outpatient sector in Germany. The participants were recruited via the German Federal Association of Speech and Language Therapy (dbf e. V.). The association has about 10,000 members (dbf e. V., n. s.). Participation was voluntary, and no incentives were offered. The members and newsletter subscribers were informed via print, website, newsletter, and social media about the study and the survey link. The print medium was the quarterly journal for the members of the dbf e. V. The website is used by both members and non-members to obtain information about speech and language therapy. The survey was offered online from June 3 to July 1, 2020. Prior to the online survey, an application for ethical approval was submitted to the committee for research ethics of the University of Applied Sciences and Arts (HAWK) Hildesheim/Holzminen/Göttingen. A positive ethics vote was issued. On the first page of the online survey, all participants were informed about the study content and data privacy and gave their informed consent. No data were collected without prior consent. The survey was conducted via the online freeware SoSciSurvey (Leiner, 2019). Until the end of data collection, the data were stored on the SoSciSurvey server. After data collection, the data were deleted from the server. A data backup will be kept on the university's own server until June 30, 2030. Persons outside the project team and temporary staff have no access to the data.

Measures

The survey was constructed in German. Furthermore, it was in accordance with literature about technology acceptance, technology functionality, and technology use (Hastall et al., 2017; Molini-Avejonas et al., 2015; Tyagi et al., 2018), and the expertise of the research group on this area. The final version consisted of 40 questions. The questions were organised within six categories: (1) overall implementation of videoconferencing, (2) sociodemographic data of patients and therapists, (3) resources used for videoconferencing, (4) technology use, (5) current implementation of videoconferencing, and (6) adoption of videoconferencing in future healthcare delivery.

The first category, 'Overall implementation of videoconferencing', contained two questions about whether respondents carried out videoconferencing during the first lockdown, and if not, for what reasons. Sociodemographic data of the participants were requested in category two, with seven questions regarding personal information about the therapists and their workplace. In the third category, 'Resources used for videoconferencing', seven questions dealt with the used channels to inform about how to implement videoconferencing

and about the used and needed hard- and software. The fourth category, "Technology use", included five questions about experiences in the implementation of videoconferencing and any technical problems that occurred. The fifth category contained 21 questions about the current implementation of videoconferencing in the outpatient sector. In addition to the perceived advantages and disadvantages of videoconferencing for therapists and patients, respondents were asked here for whom videoconferencing was used and how the transfer of the therapy content to everyday life took place. Within the last theme, "Adoption of videoconferencing in future healthcare delivery", therapists were asked nine questions about their opinion of the use of videoconferencing in the future. Within the last single question, therapists could share information about videoconferencing that they felt was not covered in the survey.

Some questions, especially the questions on sociodemographic information and certain others, only allowed for the selection of one answer. In questions about the therapists' experiences and assessments, it was often possible to select multiple answers. The respondents were asked to select from a list of options, with a free text box at the end, and could select any that applied to them. Therefore, the percentages of our reported data do not total 100. In the presentation of results, multiple answer options are indicated in brackets for the questions concerned. Moreover, not all questions had to be answered in order to proceed in the survey, and depending on the answers to other questions, non-applicable questions were omitted, or supplementary questions were asked. Therefore, not all questions were answered by the total of 816 participating therapists. The total number of responding participants is then given as a supplement.

The items were presented to each participant in the same order, with one item per page. Participants were able to change their answers through a back button. No check for completeness was made before transmission. No registration or cookies were used. A pre-test was carried out based on three speech and language therapists from the outpatient practice as well as three persons from the cooperating professional association. The test persons received a link to the pre-test. Based on the feedback, final adjustments were made, e.g. to the wording of questions and response items.

Data analysis

Data were analysed using descriptive statistics performed with IBM SPSS® version 26 (IBM, 2019). A total of 841 participants completed the online survey. 25 questionnaires were excluded from further analysis: the data sets of participants who denied the informed consent



Table 1: Participants' characteristics.

Item	Response	Frequency (%)	Mean (SD)
Gender (n = 816)	<i>Female</i>	771 (94.5)	
	<i>Male</i>	45 (5.5)	
Age in years (n = 815)			44 ($\pm$ 11)
Years of working experience (n = 812)			17 ($\pm$ 10)
Professional status (n = 816)	<i>Practice owner</i>	523 (64.1)	
	<i>Employee</i>	259 (31.7)	
	<i>Freelancer</i>	20 (2.5)	
	<i>Other</i>	14 (1.7)	
Participation by state (n = 816)	<i>Bavaria</i>	165 (20.2)	
	<i>North Rhine-Westphalia</i>	149 (18.3)	
	<i>Baden-Württemberg</i>	99 (12.1)	
	<i>Lower Saxony</i>	81 (9.9)	
	<i>Hesse</i>	66 (8.1)	
	<i>Rhineland-Palatinate</i>	61 (7.5)	
	<i>Berlin</i>	48 (5.9)	
	<i>Hamburg</i>	39 (4.8)	
	<i>Saxony</i>	23 (2.8)	
	<i>Brandenburg</i>	21 (2.6)	
	<i>Schleswig-Holstein</i>	19 (2.3)	
	<i>Saarland</i>	14 (1.7)	
	<i>Mecklenburg-West Pomerania</i>	12 (1.5)	
	<i>Thuringia</i>	8 (1)	
	<i>Saxony-Anhalt</i>	8 (1)	
	<i>Bremen</i>	3 (0.4)	

(n = 22), two data sets with invalid data (age = 0, all open answers = 'else'), and one data set of a participant who was an occupational therapist.

To prove data validity, an inconsistency check was made by proofing content and time-related aspects within the data (Schrepp, 2016). For the time-related test, the minimum processing time of 165 seconds (self-testing) was considered. On the other hand, the ratio of the median of the processing time from all answered questionnaires on a page to the individual processing time of this page was used. Since no irregularities occurred in any of the cases, no additional data were excluded.

As a result, 816 completed questionnaires were included for further analysis. Descriptive statistics were used to evaluate the frequencies of all parameters.

RESULTS

Participants' characteristics

The characteristics of the participating therapists are summarised in Table 1. Persons from all sixteen German states participated in the survey. Most participants were female (94.5%), had an average age of 44 years ($\pm$ 11 years), and an average professional experience of 17 years ($\pm$ 10 years). Most of the participants in the online survey were practice owners (64.1%).

Conducting videoconferences

The results demonstrated that 87% of the participants used videoconferencing during the first lock-down in spring 2020, while 13% did not. Speech and language therapy was most frequently conducted with children who had language development disorders, with children who had articulation disorders, and with adults who had aphasia or dysphasia. Therapists considered therapy via videoconferencing to be unsuitable predominantly for individuals who had dysphagia, speech disorders in high degree hearing loss or deafness, or damage to the head and neck section. Table 2 contrasts the indications used by the therapists and those mentioned as inappropriate (multiple responses possible).

When asked for which phase of therapy the therapists had used videoconferencing so far (multiple responses possible), 40% answered anamnesis, and 34% answered diagnostics, out of 707 respondents. 38% used videoconferencing for goal agreements, and 99% for therapy. 66% provided counselling for relatives, and 61% did for patients, via videoconferencing. The final consultation was conducted by videoconference by 34% of respondents. 3% also used videoconferencing for other purposes, e. g. interdisciplinary exchange or re-diagnostics. Similarly, 707 participants responded to the question about the setting for which videoconferencing



Table 2: Use and suitability of videoconferencing. (Please note: The specification in parentheses corresponds to the indication codes of the German 'Heilmittelkatalog' (therapeutic remedies catalogue). The dashes in the first column indicate that the answer options were not available for this question.

Disorder	Frequency used (%) n = 707	Frequency inappropriate (%) n = 816
Language development disorder (SP1)	565 (80)	139 (17)
Articulation disorder (SP3)	484 (70)	139 (13)
Aphasia or dysphasia (SP5)	299 (42)	75 (9)
Oral swallowing disturbance (SCZ)	271 (38)	160 (20)
Speech motor dysfunction (SP6)	270 (38)	89 (11)
Functional voice disorder (ST2)	262 (37)	121 (15)
Orofacial dysfunction (OFZ)	236 (33)	107 (13)
Speech disorder (SPZ)	188 (27)	57 (7)
Stuttering (RE1)	184 (26)	88 (11)
Auditory perceptual disorder (SP2)	174 (25)	207 (25)
Organic voice disorder (ST1)	163 (23)	136 (17)
Rumbling (RE2)	50 (7)	88 (11)
Speech disorders in high degree hearing loss or deafness (SP4)	42 (6)	346 (42)
Psychogenic dysphonia (ST4)	32 (5)	218 (27)
Rhinophony (SF)	32 (5)	117 (14)
Psychogenic aphonia (ST3)	26 (4)	239 (30)
Dysphagia (SC1)	-	435 (53)
Damage to the head and neck section (SC2)	-	291 (36)
Nothing applies	-	227 (28)

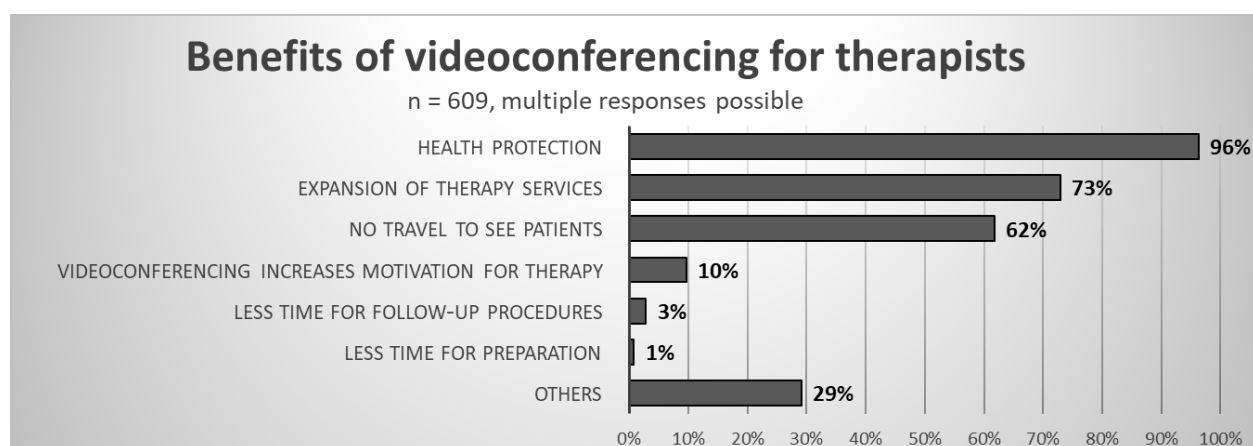


Figure 1: Benefits of videoconferencing for therapists.

was used (multiple responses possible): 100% of therapists used videoconferencing for one-to-one therapy, and 40% used it for one-to-one counselling. Group therapy via videoconferencing was offered by only 3% of respondents, and group counselling via videoconferencing was offered by only 1% of respondents. 1% answered 'others' to this question.

Out of 707 therapists, 90% reported involving relatives in videoconferencing. Of these 639 therapists who answered the question about how to involve relatives (multiple responses possible), 91% stated that relatives supported the therapy when necessary. In 79% of videoconference sessions, the relatives took part in the final conversation of the session. In 65%, they took part in the initial

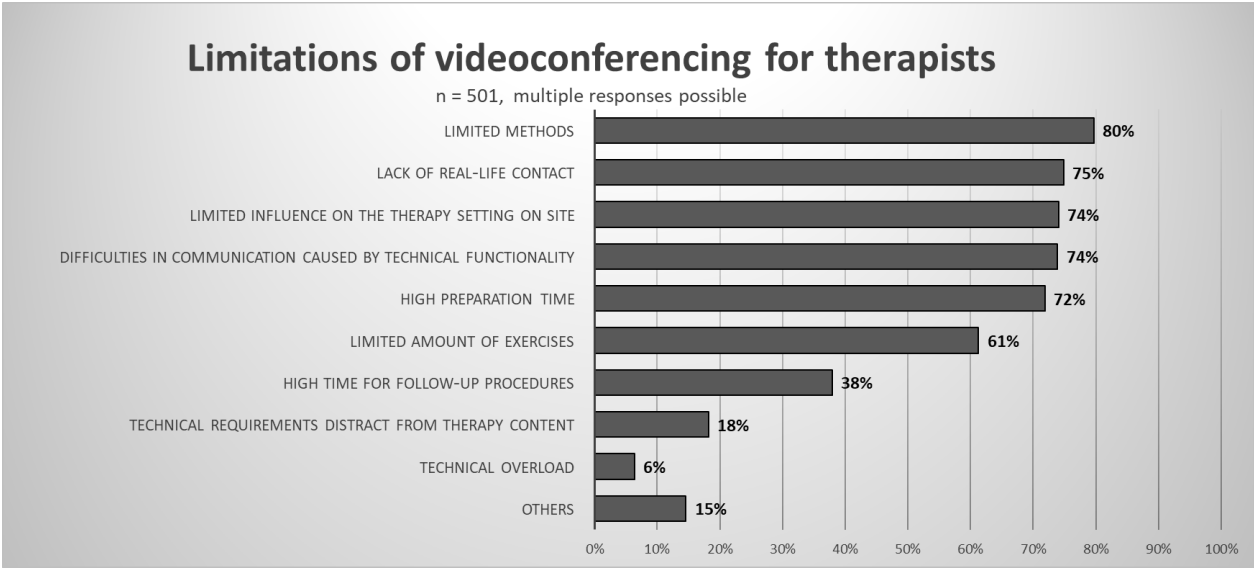


Figure 2: Limitations of videoconferencing for therapists.

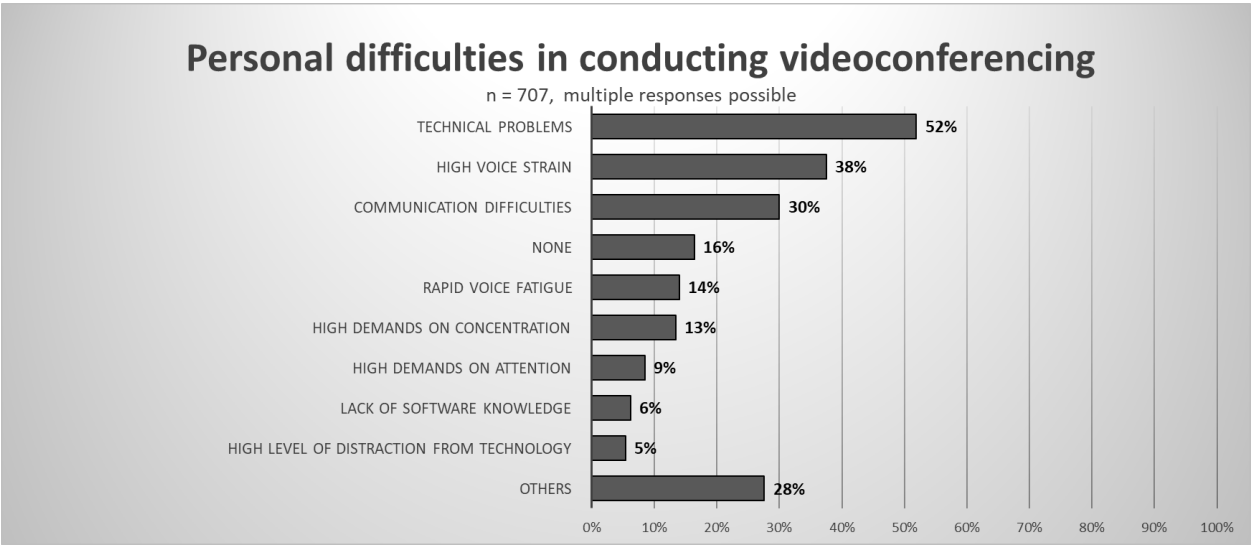


Figure 3: Personal difficulties in conducting videoconferencing.

conversation of the session. 10% of therapists stated that the relatives only watched the therapy. 5% stated ‘other’, e.g. relatives provided technical support or acted as co-therapists.

Benefits, limitations, and difficulties for therapists

Out of 707 respondents, 78% see benefits for therapists in conducting videoconferencing. 14% see no benefits, while 8% answered ‘I don’t know’. Nevertheless, the latter group indicated concrete benefits. Thus, out of 609 therapists who answered the question about concrete benefits

(multiple responses possible), almost all mentioned health protection as a benefit of videoconferencing, while the short preparation time required was only mentioned by a few. The benefits mentioned are shown in Figure 1. 707 therapists answered the question about the limitations of videoconferencing. While 64% of therapists see limitations, 29% do not, and 7% of therapists responded that they ‘don’t know’ if videoconferencing has limitations for therapists. Nevertheless, the latter group indicated concrete limitations. Thus, 501 participants answered the question about concrete limitations of videoconferencing for therapists (Figure 2, multiple



Table 3: Future prospects of videoconferencing, N = 816.

Question	'Yes' (%)	'No' (%)	'I don't know' (%)
<i>Do you see any useful applications for videoconferencing in outpatient speech and language therapy?</i>	661 (81)	89 (11)	66 (8)
<i>Can you imagine using videoconferencing in addition to frequency enhancement if this would enable better and/or faster therapy success?</i>	646 (79)	113 (14)	57 (7)
<i>Can you imagine conducting some therapy sessions in the therapy process online, without affecting therapy success?</i>	676 (83)	82 (10)	58 (7)
<i>Can you imagine conducting some therapy sessions in the therapy process online, without affecting the relation between you and your patient?</i>	662 (81)	96 (12)	58 (7)
	'Yes' (%)	'No' (%)	'I don't care' (%)
<i>Should videoconferencing be included in standard healthcare?</i>	636 (78)	137 (17)	43 (5)

responses possible). The most frequently mentioned limitation was a limited choice of methods that could be used via videoconferencing.

The question about personal difficulties in conducting videoconferencing was also answered by 707 participants (Figure 3, multiple responses possible). More than half of respondents mentioned technical problems, e.g. due to software crashes or slow internet connection. Lack of software knowledge and high distraction by technology were mentioned by less than 10%.

Of 707 participants who answered the question about how they dealt with personal difficulties in conducting videoconferencing (multiple responses possible), therapists solved the difficulties on their own (45%), got support from another person (40%), got used to the problem (24%), had no difficulties (16%), dropped out of videoconferencing (6%), or stated something else (14%).

Future prospects of videoconferencing

In order to evaluate the future use of videoconferencing, the therapists were asked for their opinion on the possible use of videoconferencing in standard healthcare. Table 3 illustrates their opinions. Remarkably, there was high consent that videoconferencing can be conducted without endangering the therapy's success, and even with the enablement of a better and faster success for the therapy. 816 therapists answered the question of how videoconferencing should be implemented in the case of integrating videoconferencing into standard healthcare. 68% considered videoconferencing in combination with presence therapy (complementary applicability). 16% preferred videoconferencing as an independent individual service. 10% had a different idea, while 6% of the respondents 'did not care' about the implementation. 816 participants answered the question of which preconditions must be fulfilled for the adoption of videoconferencing in standard healthcare (multiple responses possible). Therapists named equivalent payment as a precondition (56%) or higher payment than face-to-face therapy (32%). Some therapists imagined

separate payment modalities for videoconferencing (32%) and considered the implementation of this mode without additional qualifications to be important (38%). Therapists considered research results confirming the effect of videoconferencing as a basis for the implementation of videoconferencing in standard healthcare (30%). Some also mentioned other preconditions (8%), e.g. quality management or data privacy.

DISCUSSION

The aim of our study was to investigate whether and how speech and language therapists used videoconferencing during the initial lockdown during the COVID-19 pandemic in Germany. The reported results show that 87% of the respondents conducted videoconferencing in the outpatient practice. The high percentage of videoconferencing use during the COVID-19 pandemic shows that a large proportion of therapists were able to continue to provide care via videoconferencing as a delivery service in the short term. It also reveals a high level of acceptance of videoconferencing among the therapists.

The therapists reported that videoconferencing was used with almost all indications except dysphagia. Indeed, dysphagia therapy was excluded from the temporary permission to perform videoconferencing in Germany during the COVID-19 pandemic. On the whole, the other indications are in line with the indications for videoconferencing in the international literature. Moreover, the prevalent rating, that videoconferencing does not affect the therapy success and even provides the possibility of a better and faster therapy success, gives a first clue for the effectiveness of videoconferencing in Germany. This finding corroborates research findings of international studies (e.g., Mashima & Doarn, 2008; Weidner & Lowman, 2020).

Most therapists reported good experiences in the use of videoconferencing, even though technical problems occurred for more than half of the participants. The benefits and obstacles of videoconferencing for



therapists and patients that were mentioned by therapists correspond with those in the international literature. For example, increased efficiency, cost savings, and reduced travel times are among the benefits most indicated internationally (Coleman et al., 2015; Mashima & Doarn, 2008; McGill et al., 2019; Sutherland et al., 2018). Consistent with the findings of the systematic review by Hall et al. (2013), therapists most frequently reported difficulty during videoconferencing due to technology use, e.g. poor internet connections (McGill et al., 2019; Weidner & Lowman, 2020;). Not surprisingly, therapists reported obstacles associated with videoconferencing regarding attention problems, a finding that was also reported in Wales et al. (2017). As a limiting factor of videoconferencing, therapists frequently reported the lack of real-life encounters that they usually experience in face-to-face encounters with their patients. This is a newly reported aspect, but it is understandable due to the COVID-19 situation in which everyone had to reduce their personal contacts. Both the limitations mentioned and the difficulties in conducting videoconferencing could influence the quality of therapy.

The reported results above and the answers to the future-oriented questions about the use of videoconferencing show a general readiness of therapists to adopt the sustainable use of videoconferencing for future healthcare services. This is an important and necessary finding for speech and language therapy in Germany, especially in order not to miss the international connection to developments in the field of telehealth services. The belief of clinicians that the acceptance of telehealth will continue to grow underscores this important pandemic-induced development in Germany (Campbell & Goldstein, 2021, 2022). However, the provision of speech and language services remotely is not seen as a substitute for in-person care, but rather as a viable option for conducting therapy (Campbell & Goldstein, 2022). Also, in relation to the model of Hastall et al. (2017), the results imply a good basis for expanding the use of videoconferencing in speech and language therapy in Germany.

Videoconferencing received a boost during the COVID-19 pandemic, and also in other therapy professions like occupational therapy or physical therapy. Within these professions, as well, these were the first experiences with videoconferencing in Germany. The transferability of the results of our survey can certainly be achieved in some respects. However, each therapy profession should also be considered separately, especially with regard to methodological peculiarities. For example, in speech and language therapy, hands-on methods are not as prominent as in physical therapy or occupational therapy. However, videoconferencing also enables other health professionals to gain an insight into the home environment

and everyday life of patients as well as the inclusion of relatives on site. This can positively influence the success of the therapy. The openness to videoconferencing and the general technology readiness to adopt the sustainable use of videoconferencing that were perceived among the speech and language therapists in this study may also be applicable to the other therapy professions. Certainly, the reported difficulties with videoconferencing due to technology use and the demand for a major improvement of the digital infrastructure are transferable. However, here too, there is a need to create new structures and make adjustments.

Overall, the results of this survey in conjunction with international evidence support the adoption of videoconferencing in standard healthcare services in Germany. Therefore, policymakers should include videoconferencing in future healthcare delivery models. There is also a need for further research, e.g. on method and concept transfer for videoconferencing or on ensuring the quality of implementation. One very important aspect is the development of concepts of blended therapy to overcome the limitations and difficulties of both approaches. As a next step, the advantages and disadvantages of face-to-face therapy and videoconferencing should be compared to combine the best of both approaches. The limitations and benefits from videoconferencing only make it possible to show the limitations of face-to-face therapy. The initial findings on the use of videoconferencing in Germany, from the therapist's perspective as presented here, can serve as a basis for further research.

LIMITATIONS

The present study exclusively includes the therapist's perspective. For further evaluation of the implementation of videoconferencing, it also requires the inclusion of patients' and relatives' perspectives. The focus of this survey was on the basic frame conditions, e.g. technology use and characteristics of technology use for the first time that videoconferencing was approved by a medical panel in Germany. No data were collected on the application and suitability of therapeutic methods and concepts.

The gender distribution of the study participants shows consistent trends with federal health reporting data in Germany. In 2019, 93% of the individuals working in professions corresponding to speech and language therapy were female (Statistisches Bundesamt, 2021). In our study, 96% of participants classified themselves as female. Similar gender distribution in terms of participant structure is shown in another online survey study in speech and language therapists about telepractice (Kuvač Kraljević et al., 2020).



A selection bias can be suspected in the sample, as more individuals with an interest in videoconferencing may have participated in the survey. It is possible that individuals who had not been exposed to videoconferencing during COVID-19 did not take the survey in the first place. Also, in terms of technology affinity, it could be assumed that participants with a high technology readiness took part in the online survey. A rate of return could not be calculated because of the distribution method of the survey link.

This study was a first step to build a basis for future investigation and future in-depth analyses on the use of videoconferencing in outpatient speech and language therapy.

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ETHICAL APPROVAL

This study was approved by the committee for research ethics of the University of Applied Sciences and Arts (HAWK) Hildesheim/Holzminden/Göttingen on May 27, 2020.

CONFLICTS OF INTEREST

The authors declare no conflict of interests.

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