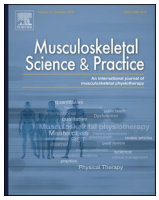
Musculoskeletal Science and Practice 72 (2024) 102930

Contents lists available at ScienceDirect

Musculoskeletal Science and Practice

journal homepage: www.elsevier.com/locate/msksp



Original article

Musculoskeletal physiotherapists' experiences of using remote consultations during the COVID-19 pandemic: A qualitative study

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ARTICLE INFO

Keywords:
COVID-19
Gadamer
Musculoskeletal
Physiotherapist
Qualitative
Remote

ABSTRACT

Background: The coronavirus (COVID-19) pandemic resulted in the rapid implementation of remote consultations to maintain musculoskeletal physiotherapy services. However, little is known about UK musculoskeletal physiotherapists' experiences of providing services during the COVID-19 pandemic.
Objectives: To explore musculoskeletal physiotherapists' experiences of using remote consultations in one area of England during the COVID-19 pandemic.
Design: Qualitative study using hermeneutic phenomenology based on the approach of Gadamer.
Methods: Semi-structured interviews with twelve musculoskeletal physiotherapists were conducted online using Microsoft Teams. Data were analysed using frameworks based on the philosophical concepts of Gadamer's hermeneutics.
Findings: Musculoskeletal physiotherapists' experience of using remote consultations during the COVID-19 pandemic was framed by three concepts: therapeutic relationship, transformational change, and uncertainty. These concepts are underpinned by four main themes capturing their experiences: (1) Disconnection: Difficulties building a rapport and reduced non-verbal communication affected building an effective therapeutic relationship, (2) Necessity: Transformation of services to remote consultations was positive, although technology and connectivity issues had a negative impact, (3) Loss of control: Diagnostic uncertainty, being unprepared, and experience affected physiotherapists' clinical practice, (4) Protection: Peer support and the use of technology facilitated a feeling of protection for physiotherapists.
Conclusion: The findings of this study contribute to a better understanding of musculoskeletal physiotherapists' experience of using remote consultations during the COVID-19 pandemic. Implications for practice include the need to provide training for all musculoskeletal physiotherapists and undergraduates to enable the effective delivery of remote physiotherapy. Furthermore, digital infrastructure should be optimised to support future delivery of remote musculoskeletal physiotherapy services.

1. Introduction

In March 2020, the UK Government imposed restrictions on non-essential contact and unnecessary travel to minimise the risk of transmission during the coronavirus (COVID-19) pandemic (Institute for Government, 2022). Consequently, UK healthcare providers rapidly implemented remote consultations (RCs) to enable patients' continued access to healthcare services safely (Mann et al., 2021). Within musculoskeletal (MSK) physiotherapy services, RCs were considered crucial in minimising the physical and mental impact of delayed assessment and management of MSK conditions during the COVID-19 pandemic (Gilbert et al., 2020; Cliffe and Stevenson, 2021). The implementation of RCs has subsequently provided an opportunity for UK healthcare services like MSK physiotherapy to integrate RCs into future practice (Collins, 2020). This aligns with the NHS Long Term Plan to digitalise mainstream healthcare (NHS England, 2019).

RCs are defined as "any situation in which the patient and clinician are not in the same room" (Mann et al., 2021, p. 3). Remote physiotherapy delivery options include using phone, video, email, websites, or using apps to provide self-management (Chartered Society of Physiotherapy, 2020). In comparison to face-to-face consultations, there is growing evidence supporting the effectiveness of RCs in MSK physiotherapy for improving pain, physical function, and disability for patients with conditions including non-specific back pain, osteoarthritis, and

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https://doi.org/10.1016/j.msksp.2024.102930
Received 15 November 2023; Received in revised form 22 February 2024; Accepted 7 March 2024
Available online 13 March 2024

knee and hip arthroplasty (Jiang et al., 2016; Cottrell et al., 2017; Dario et al., 2017). Prior to the COVID-19 pandemic, several areas in England used a remote MSK physiotherapy telephone assessment and advice service called PhysioDirect (Salisbury et al., 2013). However, studies investigating the experiences of MSK physiotherapists and patients using the PhysioDirect service highlighted concerns over effective remote communication and diagnostic accuracy (Salisbury et al., 2013; Pearson et al., 2016).

There is currently little research on the experiences of UK MSK physiotherapists experiences using RCs during the COVID-19 pandemic. In their national survey, Hawley-Hague et al. (2021) reported how MSK physiotherapists found RCs demanding with concerns about achieving an effective diagnosis. Service evaluation surveys also identify concerns over the efficacy of remote assessment and management (Shorthouse et al., 2021; Cook and Hardwicke, 2022; Webster and Reeves, 2022). In their mixed methods survey of MSK physiotherapists, medical professionals, and podiatrists, Gilbert et al. (2021) reported how difficulties achieving a timely and accurate diagnosis created concerns over "lower quality consultations" (Gilbert et al., 2021, p. 7). These UK findings are also consistent with international qualitative research on physiotherapists' experience of using RCs during the COVID-19 pandemic. Physiotherapists reported concerns over diagnostic accuracy (Alrushud et al., 2022; Ceprnja et al., 2022), reduced levels of confidence (Bennell et al., 2021; Malliaras et al., 2021; Rausch et al., 2021; Buabbas et al., 2022; Ciddi and Bayram, 2022; Haines et al., 2023; Paul et al., 2023), feeling isolated (Ditwiler et al., 2022; Roitenberg and Ben-Ami, 2023), feeling anxious (Martin et al., 2022), and feeling overwhelmed (Reynolds et al., 2021).

Considering the paucity of research on UK MSK physiotherapists' experiences of using RCs during the COVID-19 pandemic, it is important to add to the existing evidence base. Understanding any challenges MSK physiotherapists encountered is important so they can be fully supported when delivering future remote physiotherapy services (Tack et al., 2021). As such, this study aimed to explore the experiences of UK MSK physiotherapists using RCs during the COVID-19 pandemic.

Table 1
Eligibility criteria.

Inclusion Criteria	Exclusion Criteria
Musculoskeletal physiotherapists	Physiotherapists who are not musculoskeletal physiotherapists working in a musculoskeletal service
Working in a musculoskeletal physiotherapy service for one community health provider within the UK Greater than six months experience of using remote consultations during the COVID-19 pandemic	Less than six months experience of using remote consultations during the COVID-19 pandemic

2. Methods

2.1. Design

This qualitative study used hermeneutic phenomenology guided by the philosophy of Gadamer's (2004) hermeneutics. Gadamer's (2004) philosophical hermeneutics contends that awareness of our pre-understandings (knowledge and preconceptions) of a phenomenon is key to understanding the horizons (perception of an experience) of others who experience the phenomenon. By entering the hermeneutic circle, understanding and interpretation are intricately interwoven through a continuous circle of dialogue and questioning of the data, or text, as a whole (Ramsook, 2018). This creates a 'fusion of horizons' between the researchers' pre-understandings and the meaning of the text, leading to new knowledge (Austgard, 2012). This study adhered to the consolidated criteria for reporting qualitative research (COREQ) guidelines (Tong et al., 2007).

2.2. Participants

Purposeful sampling was used to recruit MSK physiotherapists with at least six months experience of using RCs (telephone or video) during the COVID-19 pandemic. The researcher contacted the MSK Clinical Lead of a community health provider in the South West of England who emailed potential participants working in the MSK outpatient service that used RCs during the COVID-19 pandemic. A participant information sheet detailing the study aims and design was then emailed by the researcher to potential participants who expressed an interest so they could make an informed decision whether to take part in the study. All participants met the eligibility criteria and were invited to participate in

Table 2
Participant demographics.

Participant Number	Gender	Role	Number of years' musculoskeletal physiotherapy experience	Number of months using remote consultations during COVID-19
#1	Male	Band 6 musculoskeletal physiotherapist	1.5 years	16 months
#2	Male	Band 6 musculoskeletal physiotherapist	2 years	18 months
#3	Male	Band 6 musculoskeletal physiotherapist	2.5 years	19 months
#4	Female	Band 5 musculoskeletal physiotherapist	0.5 years	6 months
#5	Female	Band 6 musculoskeletal physiotherapist	3 years	20 months
#6	Male	Band 7 musculoskeletal physiotherapist	11 years	20 months
#7	Male	Band 6 musculoskeletal physiotherapist	2.5 years	18 months
#8	Female	Band 7 musculoskeletal physiotherapist	9 years	20 months
#9	Male	Band 5 musculoskeletal physiotherapist	0.5 years	6 months
#10	Female	Band 7 musculoskeletal physiotherapist	10 years	11 months
#11	Male	Band 5 musculoskeletal physiotherapist	0.5 years	6 months
#12	Female	Band 5 musculoskeletal physiotherapist	2 years	20 months

Table 3
The analytical framework used in this study was adapted from Fleming et al. (2003) and Ajjawi and Higgs (2007).

Stages	Procedure	Action taken for this study
Stage 1	Identification of the researcher's pre-understandings	- Discussion with JP before and during the interviews to develop awareness of the researcher's views and experience of using remote consultations
Stage 2	Gaining an understanding through dialogue with participants	- Use of interviews and field diaries to gather verbal andnon-verbal information
Stage 3	Immersion	- Automatic transcribing of interviews verbatim using Microsoft Teams - Manually checking the transcripts against the recording to ensure accuracy - Read through transcripts while listening to the recording to immerse into the participant's text - Annotate transcripts and written notes to identify features of interest within the text and formulate ideas
Stage 4	Understanding	- Reading every sentence to expose its meaning to increase understanding of the use of remote consultations - Development of first-order participant's constructs and perspectives (open codes) expressed in participant's own words/phrases/body language - Manual coding of the data using NVivo software
Stage 5	Abstraction	- Identification of the researcher's constructs and perspectives (categories) - Manual generation of subcategories - Manual grouping of categories and subcategories into sub-themes which was generated by the researcher's personal knowledge of remote consultations and is integrated with the participant's perspectives
Stage 6	Synthesis and theme development	- Manual grouping of sub-themes into themes - Further elaboration of themes relating them to the whole meaning of the whole text - Challenging themes against the whole text and the researcher's pre-understandings to reach final themes
Stage 7	Illumination and illustration of remote consultations	- Linking the literature to the final themes identified - Reconstructing interpretations into stories based on the participants experience using their own words to illuminate remote consultations and highlight key findings from the data - Discussion with JP about the final themes and analysis - Direct quotes sent to participants to ensure they recognise their quotes and to highlight how it was used in the researcher's interpretations
Stage 8	Integration and critique	- Critique of the themes by the researcher - Reflexive discussion with JP about how the researcher's pre-understandings may have changed - Discussion with JP to determine resonance and check if they can relate and make correlations between their own world and the findings of the study - Reporting final interpretation of the research findings (fusion of horizons)
Stage 9	Establishing trustworthiness	Lincoln and Guba's (1985) criteria: Credibility, dependability, confirmability and transferability. - Credibility - Dependability - Confirmability - Transferability

JP (research supervisor; a clinical academic; registered with the Health and Care Professions Council (HCPC) as a physiotherapist).

the study (Table 1). The final sample contained a mix of clinical experience providing a deeper understanding of RCs (Campbell et al., 2020). These included MSK physiotherapists in junior (Band 5), and senior roles (Band 6 and Band 7). The researcher had a previous professional relationship with three participants working in MSK physiotherapy, and one participant was known from an undergraduate program. All participants provided informed written consent and verbally confirmed consent before each interview. The right to withdraw was made explicit.

2.3. Data collection

Twelve MSK physiotherapists (Table 2) participated in online semi-structured interviews. The interviews took place between January and May 2022, which was between 1 and 5 months after the UK government restrictions had been lifted (Institute for Government, 2022). Thirteen participants were initially recruited, and one dropped out due to personal circumstances. The sample size was considered appropriate for the purpose of hermeneutic phenomenology because smaller sample sizes can facilitate the collection of richer and deeper data from which to gain new understanding (Dibley et al., 2020). All twelve interviews were conducted, and video recorded using Microsoft Teams software. The interviews were transcribed automatically using Microsoft Teams with the researcher manually checking each transcript for accuracy against the recording. To ensure data immersion, the interview recordings were listened to prior to transcript analysis (Braun and Clarke, 2006).

The interview guide evolved throughout the interviews (Appendix A). During the study, interesting points from previous interviews were used as questions to invite participants to relate it to their own experiences. These questions arose from the researcher engaging with previous data and finding meaningful topics to explore. As participants and not the researcher generated them, this method is considered methodologically acceptable (Dibley et al., 2020). Probing questions were utilised in the interviews to encourage more detailed and meaningful accounts (Hartholt et al., 2020). This enabled the researcher to revisit what participants had mentioned and explore its meaning in greater detail (Oerther, 2021). Distinctive practices in hermeneutic interviewing were employed to further illuminate the experiences of using RCs. These included setting the tone, using incomplete sentences, seeking agreement, and guiding participants to their narrative when required (Vandermause and Fleming, 2011). Furthermore, the phenomenological practice of co-constitution was used during the interviews to support the researcher's developing interpretation and understanding (Dibley et al., 2020). Field notes were made during the interviews and added to the overall text. These notes included analytical insights and observations about RCs, interactions with the participants, and observations related to the participants non-verbal communication (Dibley et al., 2020).

2.4. Data analysis

Data analysis was performed by the researcher using methods underpinned by key concepts of Gadamer's (2004) philosophy (pre--understandings, hermeneutic circle, and fusion of horizons). A nine-stage framework was used for data analysis which combined two analytical frameworks to follow for integrating Gadamer's philosophy into the research study (Fleming et al., 2003; Ajjawi and Higgs, 2007) (Table 3). This approach has been used in previous research using Gadamerian hermeneutic phenomenology (Alsaigh and Coyne, 2021). To facilitate the process of understanding, data analysis was performed

after each interview. Throughout all stages of the data analysis, there was an ongoing interpretation by the researcher of the research text, RCs, and their pre-understandings (Fleming et al., 2003).

Texts were constructed for each participant from the interview transcripts and field notes. The researcher immersed themselves in the data by reading the text several times and re-watching the video recordings of the interviews to increase familiarity with the text. Using NVivo to code the text, the researcher manually identified first order constructs (participant's ideas expressed in their own words – their 'horizon') followed by second order constructs (researcher's personal and theoretical knowledge – their 'horizon') to create categories. Patterns across the dataset was explored manually by the researcher to identify sub-categories which were then grouped together into sub-themes. Facilitated by the hermeneutic practice of 'dwelling' in the data, the researcher used sticky notes and wall displays to modify and refine the final themes and their corresponding sub-themes (Dibley et al., 2020). The analysis was facilitated by the hermeneutic rule of movement from the whole text to parts of the text and back to the whole text to achieve new understanding and fusion of horizons (Gadamer, 2004).

Data saturation recognises the end of new insights. However, this was not pursued because it does not fit with the philosophical objective of hermeneutic phenomenology, which is to reveal an understanding through a circle of understanding that has no end point (Stenner et al., 2017). Therefore, data saturation cannot exist because new insights can occur indefinitely (Fleming et al., 2003). Instead, hermeneutic phenomenologists consider alternates to data saturation like completeness, where they consider if they have collected enough data to answer the research question satisfactorily (Dibley et al., 2020). In relation to this study, recurring themes observed in the data were considered sufficient to understand the participants' experience of using RCs during the COVID-19 pandemic.

2.5. Rigour

Trustworthiness was established using Lincoln and Guba's (1985) criteria: credibility, dependability, confirmability, and transferability. Techniques used to achieve all four criteria include a transparent description of the data collection and analysis process along with maintaining an audit trail. To increase credibility and transparency, participant's quotes were used to underpin each theme and sent to participants to confirm accuracy. Credibility is enhanced by acknowledging the presence and position of the researcher (Finlay, 2002). As pre-understandings can create bias, the researcher explored their pre-understandings with JP during the research process using a framework that enables systematic and visible pre-understandings to use as a positive input in the research (Alvesson and Sandberg, 2022). A reflexive journal was kept to account for the researcher's reflexivity during all stages of the research process (Valandra, 2012). This increases insight and facilitates self-monitoring for potential biases that enhances rigour (Cypress, 2017). Peer debriefing with JP offered an external check throughout the research process (Lincoln and Guba, 1985).

3. Findings

MSK physiotherapists' experience of using RCs (telephone and video) during the COVID-19 pandemic were framed by three concepts: therapeutic relationship, uncertainty and transformational change which underpinned the four main themes and associated subthemes (Fig. 1). Experiences contributing to each theme and subtheme are presented below.

3.1. Theme 1: Disconnection

RCs appear to create an element of disconnection between the patient and participants. Difficulties building a rapport, and reduced non-verbal communication, are subthemes that were perceived to affect participants building an effective therapeutic relationship with patients.

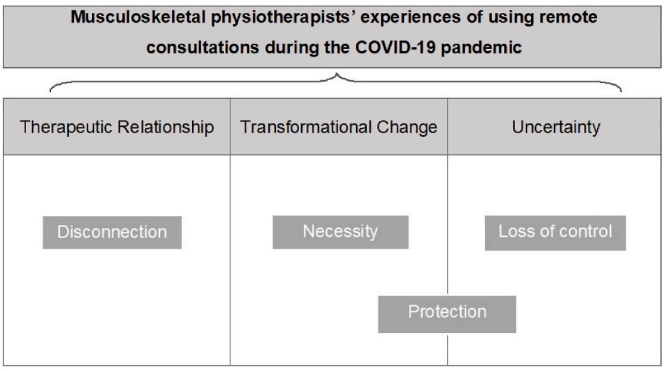

Fig. 1. Musculoskeletal physiotherapists' experiences of using remote consultations during the COVID-19 pandemic: three concepts informed by four relational themes.

3.1.1. Difficulties building a rapport

Participants reported difficulties building a rapport with patients remotely because of the absence of physical presence:

"It's just trickier to make that connection with people" (#7)

"I think it's just human nature, face-to-face, interacting. You feel more in touch with them" (#6)

3.1.2. Reduced non-verbal communication

The inability to see patients when using the telephone caused some participants difficulties connecting with their patients:

"You can't respond to people quite as well … they can't tell if you're listening, and you can't tell if they are listening" (#12)

"Things like eye contact are really important for showing empathy, which is really difficult to do over the phone" (#7)

However, the use of video technology appeared to improve connecting with patients:

"If you switch to a video call, and they could see your face and see a real person … makes a big difference" (#1)

3.2. Theme 2: Necessity

The transformation of MSK services to using RCs had a positive effect on maintaining MSK services during the COVID-19 pandemic. Participants viewed the introduction of RCs as a necessary and positive change to deliver a continuation of MSK services:

"In order to keep everybody safe, that's the world we're living in at the moment" (#5)

"It's definitely been helpful for keeping that caseload running" (#2)

However, technological and connectivity issues created common challenges which impeded this transformation:

"People's webcams not working … mine not working" (#12)

"Phone wise … there's always signal issue" (#10)

Despite these challenges, participants expressed positive views of using RCs for future physiotherapy practice:

"I think it's impressive what we've been able to achieve in two years … and how we can actually use that to our advantage in the future" (#6)

"It's a useful tool … probably most useful for follow ups" (#5)

3.3. Theme 3: Loss of control

There was a perceived sense of participants being in less control of their clinical practice because of difficulties with performing a remote objective assessment to inform the clinical diagnosis and management. Diagnostic uncertainty, being unprepared, and experience are subthemes underpinning this theme.

3.3.1. Diagnostic uncertainty

Some participants identified how the uncertainty of remote assessment using the telephone reduced their levels of confidence in forming a remote diagnosis:

"I don't trust the objective on the phone as much as I do face to face. I don't trust the patients doing what I'm telling them to do" (#2)

"You can never really be sure what's going on" (#11)

"I feel a lot of things get missed and therefore sometimes my diagnosis is not accurate. It makes me doubt myself" (#4)

While the use of video improved participants confidence in performing a remote assessment:

"You can see people moving. Video calls can just give you a bit more of a thorough assessment" (#12)

There were still difficulties in performing a comprehensive examination:

"You can't really perform your special tests" (#3)

"Some of those tests I actually need to touch, to feel" (#4)

3.3.2. Being unprepared

Participants with less experience appeared unprepared for the sudden change from assessing patients face-to-face:

"I did not have any formal training at all really. At the time it's just kind of like get on, get used to it because COVID kind of happened quite quickly" (#7)

"All the way through university, there's lots of emphasis on you must get eyes on. That was the first shock to the system … you've gone from having all this experience and building on your knowledge in a face-to-face sense, and then all of a sudden, you're thrusted over to remote consultations" (#9)

"Just had to learn on the job a little bit and I've sort of figured out what works and what doesn't" (#11)

3.3.3. Experience

In comparison to participants with less MSK experience, participants with more MSK experience found it easier to adapt to remote assessment which helped maintain control of their clinical practice:

"Seniors can often determine a clinical presentation remotely through questioning and through their experience of clinical pattern recognition. You cannot change how beneficial experience is" (#6)

"I would say that I've got so much pre-pandemic experience that I've got a lot to draw on" (#8)

3.4. Theme 4: Protection

Peer support facilitated by technology helped to offset feelings of uncertainty among some participants. This appeared to foster feelings of togetherness creating a sense of protection when using RCs:

"Everybody is on Teams [Microsoft]. I've never felt like there's not been any support when it's needed" (#3)

"It just gives you confidence that you're not alone … makes you feel safe" (#1)

4. Discussion

This study aimed to explore participants' (MSK physiotherapists) lived experiences of using RCs during the COVID-19 pandemic. Four themes were developed from a fusion of horizons between the researcher and participants: disconnection, necessity, loss of control, and protection. These themes were synthesised into the broader context of MSK physiotherapy and conceptualised as therapeutic relationship (TR), transformational change, and uncertainty. These concepts will be further discussed in the context of existing literature.

The theme 'disconnection' is conceptualised as the TR. The TR is considered an important aspect of the therapeutic alliance between physiotherapists and patients (McCabe et al., 2022). Miciak's (2015) conceptual framework describes the TR in MSK physiotherapy as conditions established between patient and physiotherapist through *ways of establishing connections* (initiating and maintaining connections), *conditions of engagement* (being present and receptive), and *elements of the bond* (building a rapport). Although Miciak's framework is not a fully formed theory, it still provides a valuable measurement of the TR, and is comprehensive, detailed, and specific to MSK physiotherapy (McCabe et al., 2022). This study highlights how RCs created challenges in establishing the three conditions considered important for building a TR between patient and physiotherapist. Participants reported difficulties building a rapport (*establishing connections and elements of the bond*) and with reduced non-verbal communication (*conditions of engagement*). These findings are consistent with studies of MSK physiotherapists' experiences of remote physiotherapy during the COVID-19 pandemic and suggest that RCs may impede the conditions necessary for physiotherapists to develop a connection with patients and establish an effective TR (Alrushud et al., 2022; Ceprnja et al., 2022; Webster and Reeves, 2022; Paul et al., 2023).

Communication is a key contributor to developing a connection between patient and physiotherapist (Søndenå et al., 2020) and is a vital component of building an effective TR (Baverstock and Finlay, 2019). Along with verbal communication, physiotherapists use non-verbal communication like active listening, body language, and facial expressions to establish a connection (Harman et al., 2011; Hiller et al., 2015). Participants in this study found that the absence of non-verbal communication created challenges for them in developing a TR with patients remotely. While this finding contrasts with previous evidence that reported physiotherapists satisfaction with developing a remote TR (Tousignant et al., 2011), a recent survey of a UK MSK physiotherapy service during the COVID-19 pandemic highlights how being unable to observe body language affected physiotherapists developing a TR (Webster and Reeves, 2022). Furthermore, qualitative studies of physiotherapists' experience during the COVID-19 pandemic highlight how the lack of physical presence can affect the overall connection with patients (Bennell et al., 2021; Paul et al., 2023; Roitenberg and Ben-Ami, 2023).

Participants in this study reported how video technology improved their connection with patients because they could visualise them and observe their body language. While this finding is supported by recent physiotherapy studies during the COVID-19 pandemic (Bennell et al., 2021; Hawley-Hague et al., 2021; Alrushud et al., 2022), physiotherapists still found challenges in building a TR when using video during the COVID-19 pandemic (Malliaras et al., 2021). However, improving communication skills when using the phone and video may facilitate establishing an effective TR. Medical research on phone consultations identifies how focussing on listening skills, using emotionally focused questions, and being responsive to patient cues can develop a stronger

TR (Pinto et al., 2012; Muller et al., 2015). Hinman et al. (2017) also reported the necessary development of communication skills in their qualitative study on physiotherapists treating knee osteoarthritis using video. They found that spending more time listening, and refining verbal cues and language had a positive effect on the TR. The implication of these findings suggests that enhancing communication skills may help physiotherapists in developing a remote TR.

The theme 'necessity' is conceptualised as transformational change and relates to transforming the delivery of healthcare services to meet future challenges (Ham, 2014). RCs in physiotherapy have been a part of the digital offer for some time, although their widespread adoption and uptake into healthcare services was limited until the COVID-19 pandemic (Bearne et al., 2021). Participants in this study viewed RCs as a necessary and positive change to maintaining MSK services during the COVID-19 pandemic. However, technology hardware and software reliability, along with poor phone and internet connectivity were key challenges for participants when using RCs. This finding is consistent with other published research on physiotherapists experience during the COVID-19 pandemic (Bennell et al., 2021; Malliaras et al., 2021; Reynolds et al., 2021; Shorthouse et al., 2021; Ceprnja et al., 2022; Webster and Reeves, 2022). While participants in this study reported overall acceptability of RCs for future physiotherapy practice, these findings suggest a need for healthcare organisations to ensure the reliability of technology and connectivity to maximise usability.

The theme 'loss of control' is conceptualised as uncertainty. RCs eliminate physical contact which can compromise the diagnostic process (Aderonmu, 2020). Participants in this study reported challenges to remote assessment creating uncertainty when formulating diagnoses. This finding is consistent with physiotherapists experience of using RCs during the COVID-19 pandemic where the absence of physical touch affected the ability to perform a thorough objective assessment to inform an accurate diagnosis and management plan (Malliaras et al., 2021; Alrushud et al., 2022; Roitenberg and Ben-Ami, 2023). However, an interesting finding from this study was how senior physiotherapists reported adapting better to remote diagnosing because of the ability to draw on their experience of clinical pattern recognition. This finding reflects conclusions of qualitative studies examining MSK physiotherapist's experience of RCs during the COVID-19 pandemic, which showed that the ability to remotely diagnose was strongly influenced by the number of years MSK experience (Ceprnja et al., 2022; Haines et al., 2023; Paul et al., 2023). In comparison, participants with less MSK physiotherapy experience in this study reported more challenges to remote diagnosis. This finding is consistent with experiences of Australian new-graduate physiotherapists' training needs and readiness for RCs during the COVID-19 pandemic. In their qualitative study, Martin et al. (2022) reported that most physiotherapists found the change to RCs significantly disrupted their usual clinical practice. This created anxiety over their perceived ability to deliver assessment and diagnostic skills remotely that they had learnt for face-to-face care. This is consistent with findings from this study and supports conclusions that less experienced physiotherapists may benefit from developing skills in remote assessment and clinical reasoning first to deliver remote physiotherapy (Martin et al., 2022; Paul et al., 2023).

The rapid uptake in RCs came with little preparation or training for many physiotherapists (Davies et al., 2021). Prior to the COVID-19 pandemic, education and training on RCs were not commonly part of physiotherapy undergraduate or postgraduate programs (Lee et al., 2020). A recent study investigating the views of Australian allied health professionals using RCs during the COVID-19 pandemic revealed that only 21% of the 688 physiotherapists had received training to deliver physiotherapy remotely (Malliaras et al., 2021). This finding resonates with this study in which participants were perceived to be unprepared for adapting their face-to-face skills to the remote environment. While the theme 'protection' highlights how the use of technology in this study had a positive impact on the provision of mentoring through peer support that reduced participants uncertainty, it is essential that physiotherapists have the knowledge, confidence, and skills to practice physiotherapy competently in the remote environment (Rausch et al., 2021; Ceprnja et al., 2022).

MSK physiotherapists have highlighted the requirement of additional skills for remote assessment during qualitative interviews assessing the acceptability of PhysioDirect. Visualisation techniques to overcome the lack of visual feedback during assessment, and enhanced communication skills that include attentive listening were considered important to help physiotherapists achieve a correct diagnosis when using the telephone (Salisbury et al., 2013). While participants in this study reported a preference for training on using RCs, a recent Cochrane review found no evidence to inform how clinicians should be trained in remote consultations (Vaona et al., 2017). Although the review recommended that training should be guided by models based on face-to-face communication (Vaona et al., 2017), a two-day training package training provided for the physiotherapists participating in the PhysioDirect trial provides an insight into how the training could be delivered (Bishop et al., 2013). Considering post-COVID-19 pandemic national healthcare publications highlight the need to train MSK physiotherapists in how to deliver effective RCs (NHS England, 2023), further research assessing the effectiveness of this type of training is urgently needed.

5. Strengths and limitations

A strength of this study was the researcher being an insider researcher with experience of RCs. This unique position enabled a better understanding of RCs (Bonner and Tolhurst, 2002), and synergises well with Gadamer's (2004) hermeneutic phenomenology to use previous experience to understand the experiences of others and gain new understanding. In addition, another strength is the mix of MSK experiences among the participants which provided this study with a rich dataset in which to explore their experience of using RCs.

The present study has limitations. Firstly, the sample was recruited from a musculoskeletal service provider in one area of England which limits generalisability across the UK. Secondly, the sample was from an outpatient MSK department meaning findings may not reflect other MSK physiotherapy settings, for example, private practice and inpatient services.

6. Conclusions

The COVID-19 pandemic made it necessary for MSK physiotherapy services to be conducted remotely. The study's findings highlight several implications for future integration. Firstly, MSK physiotherapists should receive specific training to enhance their communication skills, facilitating the development of an effective remote TR. Secondly, healthcare services need to prioritise the digital infrastructure optimisation to support the delivery of remote MSK physiotherapy services. Thirdly, it is important that physiotherapists are well-trained in the delivery of remote physiotherapy, although further research is required to identify appropriate training packages. Finally, undergraduate physiotherapy education should include training on remote consultations to adequately prepare new graduate physiotherapists for remote care delivery.

Statement of ethical approval

The University of the West of England (UWE) Faculty Research Ethics Committee granted ethical approval for this study on December 7, 2021. The study conformed to the Declaration of Helsinki.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

CRediT authorship contribution statement

Darren Cook: Darren Cook conceptualised the research project, conducted the data collection and data analysis, wrote the first draft of the manuscript, led the editing process, and prepared the final draft of the manuscript. **Jennifer Pearson:** Jennifer Pearson was Darren Cooks's research supervisor and provided feedback on the design, supported the data analysis process, provided feedback on the first draft and contributed to the final draft of the manuscript.

Declaration of competing interest

None.

Acknowledgements

The authors would like to acknowledge the participants who gave up their time to participate in the interviews.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.msksp.2024.102930.

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