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Exploration of implementation, financial and technical considerations within allied health professional (AHP) telehealth consultation guidance: a scoping review including UK AHP professional bodies' guidance

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ABSTRACT

Objectives The COVID-19 pandemic has resulted in a shift to remote consultations, but telehealth consultation guidelines are lacking or inconsistent. Therefore, a scoping review was performed to chart the information in the articles exploring telehealth for the UK allied health professionals (AHPs) and compare them with the UK AHP professional bodies' guidelines.

Design Scoping review following Aksey and O' Malley methodological framework.

Data sources CINHAL and MEDLINE were searched from inception to March 2021 using terms related to 'telehealth', 'guidelines' and 'AHPs'. Additionally, the UK AHP professional bodies were contacted requesting their guidelines.

Study selection Articles exploring telehealth for patient consultations, written in English and published in peer-reviewed journal or guidelines available from UK AHP professional bodies/their websites were considered eligible for review.

Data extraction One reviewer extracted data concerning three overarching domains: implementation, financial and technological considerations.

Results 2632 articles were identified through database searches with 21 articles eligible for review. Eight guidelines were obtained from the UK AHP professional bodies with a total of 29 included articles/guidelines. Most articles were published in the last two years; there was variety in telehealth terminology, and most were developed for occupational therapists, physiotherapists and speech and language therapists. Information was lacking about the assessment of telehealth use and effectiveness, barriers and limitations, the logistical management, the family's and caregiver's roles and the costs. There was lack of clarity on the AHPs' registration requirements, costs and coverage, and legal aspects.

Conclusion This study identified gaps in current guidelines, which showed similarities as well as discrepancies with the guidance for non-AHP healthcare professionals and revealed that the existing guidelines do not adequately support AHPs delivering telehealth consultations. Future research and collaborative work across AHP groups and the world's leading health institutions are suggested to establish common guidelines that will improve AHP telehealth services.

STRENGTHS AND LIMITATIONS OF THIS STUDY

⇒ This is the first study to provide a review of the guidelines for telehealth consultations within UK allied health professional (AHP) service provision.
⇒ A scoping review, following recommended guidelines and framework, was conducted with systematic literature searches to identify articles related to AHP telehealth consultation guidance and the 14 UK AHP professional bodies were contacted, and where required, their websites were accessed to identify the telehealth consultation guidelines they provide to their members.
⇒ Identified articles and guidelines were assessed to ascertain the presence and detail of implementation, financial and technical considerations within them.
⇒ Articles potentially relevant for the purpose of this work may have been missed due to limiting the grey literature search to the UK AHP professional bodies and their websites.
⇒ A limitation of this study is that only articles written in English and having specific methodological designs were examined.

BACKGROUND

In 2010, the WHO defined telehealth as the use of communication technologies to deliver healthcare services such as disease prevention, diagnosis and treatment, and other related activities as research and staff training.[1] The original term for telehealth, coined in 1970s, was telemedicine;[2] however, over the years, a variety of terms

(eg, telemedicine, telemonitoring, videoconferencing, ehealth, mhealth and remote consultations) has been often used interchangeably with telehealth.[2] Comparable or higher outcomes than face-to-face consultations, good patients' satisfaction, greater accessibility, convenience and reduced travel as well as wait times are some of the factors that have led to increased telehealth usage and acceptability.[3]

Although telehealth can be considered an efficient and safe modality to deliver healthcare through state-of-art communication technologies, in practice, there are barriers that can lead to unintended consequences; these include technological constraints such as inadequate internet bandwidth, lack of skills among users, inconsistent reimbursement regulations, and patient confidentiality, privacy as well as data security issues.[3] Alone or in combination, technology failures and clinical negligence, omission and miscommunication as well as misdiagnosis can cause emotional, spiritual, social or material harm to patients. For example, in 2020, video consultation recordings and other confidential information of UK patients using a telehealth start-up were made accessible to any start-up user due to a software error.[4] Additionally, concerns have been raised about the risk of patient harm resulting from the lack of diagnostic and therapeutic quality of services delivered through telehealth, as this can lead to highly infectious and life-threatening conditions being missed.[5] This can result in substantial risk of death to people with untreated conditions resulting in clinical complications and pose a high risk of community-based disease transmission and potential loss of life.[5] The contactless nature of telehealth consultations and the possible lack of continuity of care are the other factors that may contribute to clinicians not having a full understanding of the patient's past medical and family history, leading inevitably to a less effective care and to patient suffering. These barriers, together with their ethical and legal implications, need to be considered when implementing telehealth consultations within a service. Robust guidelines should be available to assist clinicians in mitigating these barriers by offering clear instructions on how to provide remote consultations, which would also help them limit inappropriate and ineffective interventions, and most importantly, harm to patients.[6]

The COVID-19 pandemic led to a rapid transition to remote consultations as a stand-alone treatment modality to minimise the risk of COVID-19 transmission, while ensuring continuity of care for patients and preserving healthcare resources.[7] This radical change resulted in an unprecedented expansion of telehealth and led stakeholders to rethink care delivery models.[8] Although the pandemic may represent a definitive transition from traditional to technology-mediated care, concerns and limitations related to telehealth and the unintended risks, errors and harm that can occur to patients during and/or as a result of remote consultations are still present. The information regarding legal policies, guidelines to support clinicians while providing care remotely and the minimum standards for using telehealth is lacking or inconsistent across countries.[1] Furthermore, the introduction of new technologies within existing work routines and conventional practices can be disruptive at both service and clinician level,[9] making healthcare professionals more vulnerable to malpractice. To ensure successful integration of telehealth into existing healthcare systems, there is a need to develop new or revise existing clinical practice guidelines for telehealth, which may act as 'trailblazers',[9] regulating and guiding novel technologies and practices, thereby preventing the performance of harmful interventions, preserving patients' safety and promoting high-quality of care.

Ninety-seven per cent of the respondents to a survey by the American Telemedicine Association believe that telehealth should have guidelines, which would standardise approaches and, consequently, improve telehealth credibility to patients and clinicians and limit its liability.[10] Additionally, guidelines are necessary to inform clinicians on how to set up remote consultations considering defined implementation and technological requirements and patients' as well as their family's needs thereby providing safe and effective care.[10] Furthermore, identifying and defining telehealth standards would help insurance companies, regulators and policymakers develop and/or adapt evidence-based policies and guidelines, which can be used to set out the standard of care in legal cases and to guide telehealth use in AHP services.

This scoping review, based on a systematic search of the literature, with a comparison of the telehealth guidance published in journals with those developed by UK AHP professional bodies, aims to summarise the information detailed in telehealth guidelines for allied health professionals (AHPs). It will map the current UK and international evidence on telehealth for AHP patient consultations, establish the existing research needs and serve as the basis for influencing clinical practice and for developing guidelines and policies. For this study, we will use the term telehealth to refer to the use of telecommunication technologies to conduct remote patient consultations. The objectives of this study are to: (1) explore the AHP telehealth guidelines currently available in the scientific literature and compare them with those developed by the UK AHP professional bodies and to (2) identify the considerations necessary to set up and deliver AHP patient consultations via telehealth.

METHODS

Protocol design

This scoping review followed the methodology proposed by Levac *et al*,[11] which builds on the methodological framework developed by Aksey and O' Malley.[12] The Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines extension for scoping reviews were also used throughout the review process.[13] The review protocol for this review was not registered.

Stage 1: identifying the research question

The research questions that guided this scoping review were:

- How do the UK AHP professional bodies telehealth guidelines compare with each other and to the available literature on AHP telehealth consultation guidance?
- What are the implementation, financial and technical considerations necessary to set up and deliver AHP patient consultations via telehealth?

Stage 2: identifying relevant studies: search strategy

A combination of database and grey literature searching was used for this study. The paper includes both: (1) articles identified via databases, hereafter referred to as articles and (2) guidelines identified from UK AHP professional bodies or their websites, hereafter referred to as guidelines. The search of the grey literature was limited to the guidelines provided by the UK AHP professional bodies or available on their websites, which were developed either by the UK professional bodies or the National Health Service (NHS).

Articles identified via databases

A systematic literature search was conducted using MEDLINE and CINAHL via EBSCOhost. These databases were searched from their inception to March 2021 with a series of subject headings and free-text terms for the following keywords: 'telehealth', 'Allied Health Professional' and 'guidelines'. The set of keywords for 'Allied Health Professional' included terms referring only to the UK NHS's 14 AHP professionals:[14] art therapists, drama therapists, music therapists, chiropodists/podiatrists, dietitians, occupational therapists, operating department practitioners, orthoptists, osteopaths, paramedics, physiotherapists, prosthetists and orthotists, radiographers, and speech and language therapists. Keywords were combined with Boolean operators; the full search strategy is available in online supplemental file 1.

Guidelines identified from UK AHP professional bodies or their websites

All 14 UK AHP professional bodies were contacted to request the telehealth consultations guidelines they provide to their members. In case of no response or absence of existing guidelines, the AHP professional bodies' websites were accessed to search for other possible available resources.

Stage 3: selection of relevant articles

All the records identified through database searching were exported into citation management software (Mendeley, Elsevier B.V.), where all duplicates were automatically removed. To supplement this, one reviewer (EL) also undertook a manual check of the identified articles to identify duplicates. One reviewer (EL) independently screened the records (titles and abstracts) to assess their eligibility based on the inclusion and exclusion criteria. Subsequently, one reviewer (EL) screened the full text of articles and relevant articles were selected for data retrieval. Any uncertainty about eligibility was resolved through a discussion with the second reviewer (AH). In case of disagreement on eligibility between the two reviewers, then the article was discussed with the wider team.

Inclusion and exclusion criteria

The following inclusion and exclusion criteria guided the selection of both: (1) articles identified via databases and (2) guidelines identified from UK AHP professional bodies or their websites.

Articles identified via databases: inclusion and exclusion criteria

Inclusion

- Articles exploring the use of telehealth for patient consultations in the 14 NHS AHPs recognised in the UK or in healthcare professions in which UK NHS AHPs were included.
- Guidelines, practical guidance, consensus statements, editorials, experts' opinions, case studies, editorial and narrative as well as systematic reviews from peer-reviewed journals were considered eligible for review.
- Articles whose full text was accessible.
- Articles available in English language.

Exclusion

- Articles exploring the use of telehealth for purposes other than patient consultations or not requiring direct interaction between patients and AHP professionals (eg, remote monitoring, training, health apps, etc).
- Articles where telehealth was used by AHP students.
- Letters to the editor, patient education handouts and reviews not providing clear guidance on how to use telehealth for patient consultations.
- Articles published in non-peer reviewed journals such as magazines.
- Articles whose full text was not accessible.
- Articles in languages other than English.

Guidelines identified from UK AHP professional bodies or their websites: inclusion and exclusion criteria

Inclusion

- Telehealth guidelines received directly from the UK AHP professional bodies.
- Telehealth-related information present in the UK AHP professional bodies' websites that were produced directly by them or by the NHS.

Exclusion

- Resources available on the AHP professional bodies' websites that were produced by third parties.

Stage 4: charting the data

Data were extracted from the abstracts and the full texts of the included articles by one reviewer (EL). Any uncertainties were eliminated by discussion with a second reviewer (AH) and with the wider team, if any

Table 1 Implementation, financial and technical considerations extracted from articles identified through the database search and UK allied health professionals bodies' guidelines

Implementation considerations	Financial considerations	Technical considerations
► Purpose telehealth can be used for. ► Patient eligibility. ► Clinician's and patient's checklist. ► Patient information (eg, consent). ► Documentation (eg, notes and resources). ► Confidentiality. ► Assessment of telehealth use and effectiveness. ► Eligibility of AHPs (eg, registration issues). ► Team characteristics. ► Limitations and barriers.	► Costs, reimbursement and coverage.	► AHPs' and patient's training. ► Logistical management (eg, booking system and IT support). ► Room, session and technical requirements. ► Privacy and security issues (eg, platform use and data storage). ► Risk management and patient's safety. ► Family's and caregiver's roles. ► Legislations and legal as well as ethical aspects.

AHP, allied health professional.

disagreement between the two reviewers was not resolved. The reviewer followed a data charting form, collectively developed by the research team, which included telehealth domains reported in guidelines produced by the NSW Agency for Clinical Innovation such as implementation, financial and technical considerations.[15] The implementation considerations included key factors for the successful telehealth delivery such as the identification of the purposes for which telehealth can be used, patient's and clinician's eligibility criteria and the assessment strategies to adopt to monitor telehealth use and effectiveness. While the financial considerations covered the costs, reimbursement and coverage aspects of telehealth, the technological considerations summarised the technological requirements and the facility spaces necessary for telehealth as well as the legal, privacy and security issues concerning remote consultations via telehealth. During the piloting phase of the charting form, we also identified other relevant telehealth domains that were added to the final data extraction form such as the purpose telehealth can be used for, patient eligibility, AHPs' eligibility, team characteristics, limitations and barriers, and family's as well as caregiver's roles. Data were analysed through a descriptive analytical approach that involved the reviewer conducting an in-depth evaluation of the included studies to identify in each article/guideline any of the domains summarised in table 1. The depth of discussion of the different domains within the articles was not assessed.

For each article, the following additional information was extracted: country of publication, study design, clinical population, audience, telehealth terminology, type of telehealth used and any relationship with the COVID-19 pandemic. The same extraction criteria were applied to the guidelines received from the UK AHP professional bodies and to the resources available on AHP professional bodies' websites.

Due to the design of the current study, a quality assessment of the included papers was not conducted. We used the level of evidence grading scale developed by Wright *et al*[16] for methodological appraisal of all the articles identified via the database searches. The included articles were appraised using a 1–5 grading scale, with higher scores indicating lower methodological quality.

Stage 5: collating, summarising and reporting of results

A narrative report was produced to summarise the implementation, financial and technical considerations of the currently available telehealth article/guidelines and to highlight any gaps in the existing guidance. Any similarities or differences between/within international and UK articles/guidelines were also reported.

Stage 6: consultation

This stage was not incorporated in the design of our study.

Patient and public involvement

No patient involved.

RESULTS

The database searches identified 2632 articles (Medline: n=1753; CINHAL: n=879). After duplicates were removed, either automatically or manually, this was reduced to 2034. Following title/abstract review, 24 articles progressed to full-text review. Of these, three were excluded as they did not provide information relevant to this study. Therefore, 21 articles were deemed eligible for review. Of the 14 UK AHP professional bodies, seven responded to our request for information (chiropodists/podiatrists, orthoptists, osteopaths, paramedics, prosthetics and orthotics, radiographers, and speech and language therapists). Five had produced telehealth guidelines that they provided (chiropodists/podiatrists, orthoptists, osteopaths, prosthetics and orthotics and speech and language therapists), either via email or via a web page link directing to their website, for review. Of those professional bodies who did not respond, three (dietitians, occupational therapists and physiotherapists) had information that we

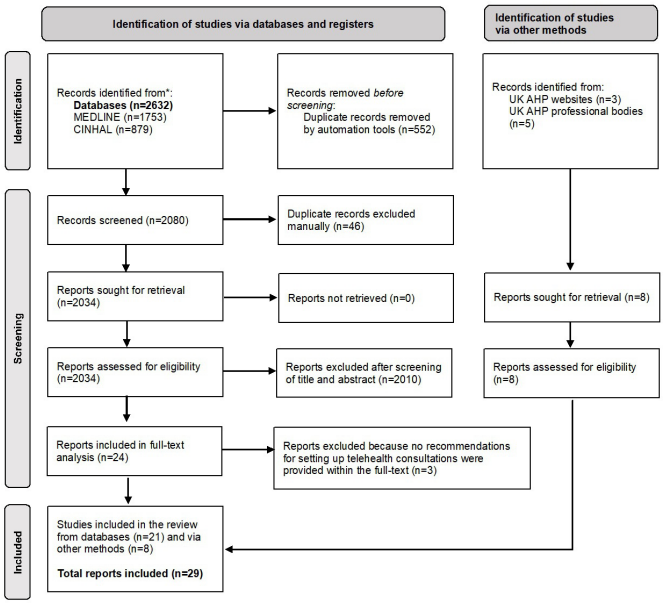

Figure 1 Flow diagram of the study selection process. AHP, allied health professional.

were able to access via their websites. Therefore, a total of eight guidelines obtained from the UK AHP professional bodies were included in the review. Adding this to the 21 articles identified through the database search, a total of 29 articles/guidelines were included for synthesis. Figure 1 summarises the study selection process. Information on the general characteristics of the included articles is provided in tables 2 and 3.

Characteristics of included articles/guidelines

Of the 21 included articles identified through the database searches, the majority was published in the USA (n=9), followed by Canada (n=4) and Australia (n=3). Three were not country specific as they were developed by international boards and the two remaining articles were from Finland and Saudi Arabia. When articles/guidelines were categorised by year of publication (figure 2), it was evident that telehealth is a recent and growing area of research with all articles being published within the last two decades and more than half of them (n=16) being developed in the last two years. Notably, 13 (45%) of the included articles/guidelines were published in response to the COVID-19 pandemic; all the guidelines identified through the UK AHP professional bodies or their websites and five of the articles identified through the database searches were produced in response to the COVID-19 pandemic.

For the articles identified through the database searches, there were five position statements, four clinical practice guidelines and three single expert's opinions. Other study designs were consensus statement, group expert opinion, case study, literature review and editorial. This reflected on the level of evidence with 19 articles categorised as level 5 evidence. Most of the articles/guidelines were developed for occupational therapists, physiotherapists and speech and language therapists (n=7 for each AHP group, including one for each profession from the UK AHP professional bodies). Three articles/guidelines were designed for all AHPs, two for dietitians (one from the UK AHP professional bodies) and one guideline was published for each of the following AHP groups, all from the UK AHP professional bodies: art therapist, orthoptists, osteopaths, prosthetists and orthotists and chiropodists/podiatrists.

Twenty articles/guidelines were not disease or population specific, while six provided information for managing people with specific conditions such as Duchenne muscular dystrophy, head and neck cancer, voice and upper airways dysfunctions, overweight/obesity and malnutrition disorders, and spinal disorders. Three offered suggestions for specific populations such as women with breast cancer, adults with functional impairment and older adults as well as disabled people. A combination of audio and video telehealth consultation modalities were discussed in 16 articles/guidelines, while video technologies were discussed alone in five articles/guidelines. Three articles/guidelines adopted video technologies either alone or in combination with audio modalities for group patient sessions. A wide variety of terminology referring to telehealth has been used across articles/guidelines with telehealth, telemedicine, telecommunication, telerehabilitation and telepractice the most frequently used terms (see figure 3).

Implementation, financial and technical considerations

The domains contained in the telehealth articles/guidelines are summarised in table 4. The table includes the percentages of the articles/guidelines that discussed the domains and of the domains included in each article/guideline to provide an indication of the completeness of the articles/guidelines. Among the topics, the purpose telehealth can be used for, the patient eligibility, AHP's and patient's training and privacy as well as security issues were the most reported aspects, in both the articles identified through the databases and in the UK AHP professional body guidelines. The legislation, legal and ethical aspects were other considerations frequently reported among articles identified through database searches, while patient information and room, session and technical requirements were popular among the UK AHP professional body guidelines. In both groups, the less explored aspects were the assessment of telehealth use and effectiveness, the barriers and limitations, the logistical management, the family's and/or caregiver's roles and the financial considerations expressed in terms of costs, reimbursement and coverage. No implementation and technical considerations were provided by Hailey *et al*[17] and the British Association of Prosthetists and Orthotists (BAPO),[18] respectively. The most comprehensive guideline among those from the UK AHP professional bodies was produced by the Royal College of Speech and Language Therapists (RCSLT).[19] A summary of the main findings is provided below with additional information provided in online supplemental file 2.

Table 2 Characteristics of the included articles identified via database searches

ID	Authors	Year	Country of publication	Type of article	Level of evidence	Audience	Clinical population	Type of telehealth used	COVID-19 pandemic related
1	Bamaga *et al*[34]	2021	Saudi Arabia	Consensus statement	V	AHPs and caregivers	DMD	Not specified	Yes
2	Ben-Aharon[20]	2019	USA	Practical guideline	V	SLTs	Not specified	Video consultations	No
3	Bierman *et al*[24]	2018	USA	Literature review	V	OTs and PTs	Not specified	Audio and video consultations	No
4	Burns and Wall[31]	2017	Australia	Literature review	V	SLTs	People with head and neck cancer	Video consultations	No
5	Cason[44]	2014	USA	Expert opinion	V	OTs and PTs	Not specified	Not specified	No
6	Collie *et al*[40]	2006	Canada	Clinical practice guideline	V	Art therapists	Women with breast cancer	Audio and video consultations – group sessions	No
7	Denton[25]	2003	USA	Expert opinion	V	SLTs	Not specified	Not specified	No
8	Doll *et al*[45]	2021	USA	Clinical practice guideline	V	SLTs	People with voice and upper airways dysfunctions	Audio and video consultations	No
9	Hailey *et al*[17]	2005	Canada	Experts' opinion	V	AHPs	Not specified	Video consultations	No
10	Haldeman *et al*[21]	2021	International	Consensus statement	V	A series of healthcare professionals including PTs and patients	People with spinal disorders	Audio and video consultations	Yes
11	Jacobs *et al*[41]	2015	International	Position statement	V	OTs	Not specified	Not specified	No
12	Kelly *et al*[30]	2020	Australia	Position statement	V	Dietitians	People with chronic disease related to overweight/obesity and malnutrition	Audio and video consultations	No
13	Lee *et al*[28]	2020	USA	Expert opinion	V	PTs	Not specified	Audio and video consultations	Yes
14	Meredith *et al*[39]	2013	Australia	Experts' opinion	V	SLTs	Not specified	Video consultations	No
15	Middleton *et al*[35]	2020	USA	Case study	IV	PTs	Adults with functional impairment	Audio and video consultations	Yes
16	Quigley *et al*[29]	2020	Canada	Editorial	V	PTs	Not specified	Not specified	Yes
17	Simila *et al*[42]	2014	Finland	Case study	IV	OTs	Older adults and disabled people	Video consultations - group sessions	No
18	Waguespack *et al*[43]	2005	USA	Position statement	V	SLTs	Not specified	Audio and video consultations	No
19	Wakeford *et al*[27]	2005	USA	Position statement	V	OTs+OT assistants	Not specific	Audio and video consultations	No
20	Wong *et al*[32]	2021	Canada	Clinical practice guideline	V	Healthcare professionals	Not specified	Audio and video consultations	No
21	World Federation of Occupational Therapists[26]	2014	International	Position statement	V	OTs	Not specified	Not specified	No

AHPs, allied health professionals; DMD, Duchenne muscular dystrophy; OTs, occupational therapists; PTs, physiotherapists; SLTs, speech and language therapists.

Implementation considerations

Purpose telehealth can be used for

Eighteen articles/guidelines (59% of all the articles/guidelines), including most of the UK AHP professional bodies' guidelines (n=7), stated the purpose of the guidance. They indicated that telehealth can be used for a variety of services including triage,[20–23] advice provision,[21 22 24] assessment,[18 19 22 25] intervention,[25–27] provision of piece of equipment,[18] remote monitoring,[23 24 26 27] service evaluation,[22] patient education,[21 24 27] consultations with other AHPs[22 26] and staff supervision.[24 27]

Patient eligibility

Most telehealth articles/guidelines (69% (n=20) of all included articles/guidelines, six from the UK AHP professional bodies) contained elements related to patient eligibility. Four of the articles/guidelines[20 28–30] stated that patients should be triaged prior to telehealth

Table 3 Characteristics of the included guidelines identified through UK AHP professional bodies or their websites

ID	AHPs	Authors	Year	Source	Clinical population	Type of telehealth used	COVID-19 pandemic related
22	Chiropodists/ podiatrists	The College of Podiatry	March 2020	Professional body via email	Generic	Audio and video consultations	Yes
23	Dietitians	NHS England and NHS Improvement	April 2020	Professional body's website	Generic	Audio and video consultations	Yes
24	Occupational therapists	Royal College of Occupational Therapists	May 2020	Professional body's website	Generic	Video consultations – group sessions	Yes
25	Orthoptists	British and Irish orthoptic society	April 2020	Professional body	Generic	Audio and video consultations	Yes
26	Osteopaths	The Institute of Osteopathy	April 2020	Professional body via email	Generic	Audio and video consultations	Yes
27	Physiotherapists	The Chartered Society of Physiotherapists	May 2020 (last review December 2020)	Professional body's website	Generic	Audio and video consultations	Yes
28	Prosthetists and orthotists	The British Association of Prosthetists and Orthotists	April 2020	Professional body via email	Generic but provides information about the management of knee OA, foot drop and DVT requiring compression hosiery	Audio and video consultations	Yes
29	Speech and language therapists	The Royal College of Speech and Language Therapists	July 2020	Professional body via a link directed to their website	Generic	Video consultations	Yes

AHPs, allied health professionals; DVT, deep vein thrombosis; NHS, National Health Service; OA, osteoarthritis.

consultations to determine the appropriateness of this care modality. They recommended that the decision should be made on a case-by-case basis[19 31] and should be dictated by professional judgement.[19 23 26 32 33] Eighteen articles/guidelines reported that the decision should consider individual patient's characteristics to provide individualised care.[34 35] Details on patient's eligibility criteria for telehealth mentioned in the articles/guidelines included in the review are provided in online supplemental file 3.

Clinicians' and patient's checklist

Of the 29 included articles/guidelines, 11 articles (41%, four from the UK AHP professional bodies) offered a clinician's and patient's checklist to guide telehealth consultations. In these articles/guidelines, a clinician's checklist with information to collect before, during and after the virtual consultation was present. A checklist for stated items AHPs should meet before, during and after a telehealth consultation is provided in online supplemental file 4. The study by Wong *et al*[32] was the only one that provided a checklist for patients attending a telehealth consultation.

Patient information

The patient information topic, which mainly composed of information about gaining consent for treatment, was discussed by 15 articles/guidelines (52% of all included articles/guidelines), six of which were UK AHP professional body guidelines. Bierman *et al*,[24] the RCSLT[19] and Wong *et al*[32] stated that consent should be obtained at the beginning of the virtual session before starting the treatment. Six articles/guidelines[19 21 24 32 36 37] explained the nature of the consent with the manner of obtaining the consent (verbal,

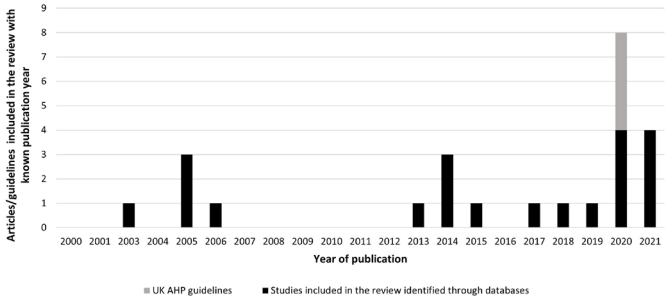

Figure 2 Scoping review search results by year of publication. AHP, allied health professional.

Figure 3 The telehealth terminology used across articles/guidelines.

Table 4 Summary of the implementation, financial and technical considerations present in the articles/guidelines obtained through the database searches and the UK AHP professional bodies or their websites

Domains	Database searches results ID																					UK AHP professional bodies or their websites ID								% of articles/ guidelines which discussed domain
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	
Implementation considerations																														
Purpose telehealth can be used for	■	■	■		■		■			■			■		■				■	■	■			■	■		■	■	■	59%
Patient eligibility		■	■	■		■	■	■			■	■	■		■	■	■			■	■			■	■	■			■	69%
Clinician's and patient's checklist		■	■							■		■		■	■	■				■				■	■		■		■	41%
Patient information (eg, consent)			■	■		■	■			■				■		■				■	■		■		■	■	■	■	■	52%
Documentation (eg, notes and resources)		■	■	■		■	■	■	■	■					■	■	■			■			■		■	■	■	■	■	59%
Confidentiality			■	■	■	■		■		■	■			■					■		■				■		■		■	45%
Assessment of telehealth use and effectiveness													■											■					■	10%
Eligibility of AHPs (eg, registration issues)		■	■	■	■	■	■	■			■				■	■	■	■	■		■		■		■					55%
Team characteristics	■	■		■		■	■	■							■		■							■						21%
Limitations and barriers					■	■	■	■						■															■	31%
Financial considerations																														
Costs, reimbursement and coverage		■		■	■			■		■	■	■				■			■										■	34%
Technical considerations																														
AHP's and patient's training		■	■	■		■	■			■			■	■		■		■	■	■		■		■	■		■		■	62%
Logistical management (eg, booking system and IT support)		■		■			■										■		■	■									■	24%
Room, session and technical requirements		■		■		■	■	■	■						■	■	■		■	■		■		■	■	■	■		■	59%
Privacy and security issues (eg, platform used and data storage)		■	■	■		■		■		■	■			■	■	■	■			■		■	■		■	■	■		■	66%
Risk management and patient's safety	■	■	■	■		■				■	■		■		■		■					■		■			■		■	48%
Family's and caregiver's roles	■	■		■			■								■	■				■			■						■	31%
Legislations and legal as well as ethical aspects		■	■	■			■	■	■	■	■		■	■		■		■	■		■	■			■		■		■	62%
% of domains discussed by article/ guideline	17%	78%	61%	78%	28%	61%	67%	56%	17%	50%	39%	22%	33%	33%	61%	56%	50%	17%	44%	56%	39%	33%	44%	44%	56%	33%	50%	22%	89%	

Black denotes that the information is available in the article/guideline.
AHPs, allied health professionals.

written or implicit consent by accepting to join the telehealth consultation) varying across articles/guidelines. Eight articles/guidelines[19 21 25 26 29 32 38] mentioned that AHPs should make patients aware of the risks and limitations associated with telehealth. Risks related to a potential breach of privacy, confidentiality and security were acknowledged in five articles/guidelines,[19 25 26 29 32] limitations related to the assessments and treatments provided remotely in four[21 25 26 32] and other non-specified risks in two.[25 38] It was stated that patients should also be informed about the differences between telehealth and face-to-face consultations.[25 32] Four articles/guidelines[19 36 37 39] clarified that participation in a telehealth consultation is completely voluntary and that patients can refuse this mode of delivery.[19 39] In this case, it was stated that AHPs should offer alternative treatment options,[19 26] which however may not be always available.[36 37]

Documentation

Seventeen articles/guidelines (59% of all included articles/guidelines), six from UK AHP professional bodies, included documentation information. Four UK AHP professional body guidelines[33 36–38] reported that AHPs should record the consultation as it was a face-to-face appointment. Quigley *et al*[29] stated that patient documentation should have a Subjective, Objective, Assessment and Plan note format.[29] Ben-Ahron,[20] the College of Podiatry[36] and The Chartered Society of Physiotherapists[37] also reported that subjective information and clinical outcomes should be documented, but no suggestion about the use of a structured format was provided.[20 36 37] Four articles/guidelines[19 24 29 33] mentioned that AHPs should specify in their notes that the consultation was delivered remotely. Two articles/guidelines[33 35] suggested that any limitations encountered during the consultation, either related to the assessment and treatment or to technology and safety, should be reported. Denton[25] recommended AHPs to document the equipment used during the consultation, the people that took part in the virtual consultation and the reason behind their participation.[25] It was recommended that any patient-related communication (eg, emails, tests and prescriptions) should be included in the patient's documentation.[24] Six articles/guidelines also mentioned the resources provided to the patient.[18–20 31 35 40] These resources could be either digital in form of videos[19 20 31] or in writing as a leaflet[18–20 31 35 40] and can detail information about the consultation,[18 19] how to do use a virtual platform[19] and how to solve any possible technology issues.[31]

Confidentiality

Fourteen articles/guidelines (45% of all included articles/guidelines), including four UK AHP professional body guidelines, contained recommendations about patient confidentiality protection.

Assessment of telehealth use and effectiveness

Three articles/guidelines (10% of all included articles/guidelines),[19 22 28] two of which are UK AHP professional body guidelines,[19 22] mentioned the use of a continuous monitoring process to evaluate the effectiveness of telehealth interventions. The RCSLT guideline[19] from the UK was the only study to report the quality improvement strategies that can be adopted such as an online questionnaire and feedback from the patient and their family.[19]

Eligibility of AHPs

Most of the included articles (55%, n=16) and two of the UK AHP professional body guidelines[23 38] had elements related to the AHPs' eligibility to conduct telehealth consultations. Eleven articles/guidelines[20 24–27 29 31 41–43] reported that AHPs must be registered practitioners to practice telehealth. However, the licensure and registration requirements varied across those articles/guidelines providing information about registration issues;[20 25 27 29 40 42 44] these were mainly from the USA[25 27 40 42 44] and discussed issues around practising across different states. Two UK AHP professional body[36 38] provided information regarding eligibility requirements during the COVID-19 pandemic. Telehealth was considered appropriate for AHPs who were self-isolating[36 38] and for those who can work from home using an approved organisational Information Governance system.[38]

Characteristics of the team

A small number of articles/guidelines (21%, n=10), with one from a UK AHP professional body,[22] detailed the characteristics that a team providing telehealth should have. Five articles[25 34 35 40 45] recommended that telehealth consultations should be conducted by a multidisciplinary team that includes physicians, AHPs, nurses and support personnel. One stated that other non-qualified facilitators can be involved in the provision of remote consultations.[40] A triage team could support the service by prioritising patients based on their urgency.[45] Similä *et al*,[42] Burns and Wall[31] and the Royal College of Occupational Therapists[22] stated that telehealth services would benefit from the presence of a telehealth service coordinator and AHP digital leader to monitor the clinical, operational, technical and financial aspects of the service and promote collaboration with other local stakeholders.[22 31 42]

Limitations and barriers

Six articles/guidelines (31% of all included articles/guidelines),[19 25 39 40 44 45] including one guideline from a UK AHP professional body,[19] acknowledged barriers and limitations associated with remote consultations, which appear to pertain to different telehealth aspects. Denton[25] and Cason[44] recognised the potential multistate licensure requirements and the attached application and renewal fees as potential barriers to telehealth.[25 44] The nature of telehealth was seen as a limitation as it may affect the communication[19] and the relationship between the patient and the treating clinician,[39] which may lead the patient to experience alienation feelings.[40] The nature of the remote consultations that can limit the AHPs' ability to perform hands-on patient assessment and treatment was also discussed.[45]

Financial considerations

Costs, reimbursement and coverage

Ten articles (34% of all included articles/guidelines),[19–21 26 29–31 41 44 45] including a UK AHP professional body guideline,[19] explored the financial aspects associated with telehealth. Two articles/guidelines[19 30] mentioned the telehealth service costs. While Kelly *et al*[30] stated that telehealth consultations should be cost neutral,[30] the RCSLT guideline[19] reported that the consultation fees may be different compared with face-to-face appointments due to overheads and possible increased planning time.[19] Five articles/guidelines[26 27 31 41 44] provided information about the reimbursement process. Jacobs *et al*,[41] Burns and Wall[31] and the World Federation of Occupational Therapists[26] stated that AHPs and the telehealth providing sites must adhere to the reimbursement requirements.[26 31 41] Burns and Wall[31] specified that this should happen even if they cross different healthcare services, states or countries.[31] Coverage for telehealth services was discussed in four articles/guidelines.[20 29 44 45] Ben-Aharon[20] and Quigley *et al*[29] stated that the patient's insurance company should be contacted to determine whether it offers telehealth coverage.[20 29]

Technical considerations

AHPs' and patient's training

Eighteen articles/guidelines (62% of all included articles/guidelines), with five UK AHP professional body guidelines,[19 22 36–38] acknowledged training for AHPs and/or patient as a requirement for telehealth consultations. Many of the articles/guidelines (n=11) mentioned that technology training is an essential competency for AHPs only. Six articles,[19 28 32 36–38] four from the UK AHP professional bodies,[19 36–38] mentioned that both AHPs and patients should be competent in the use of technology communication for remote consultations. In one article,[35] patients were considered the only ones requiring technology training for telehealth. In addition to the technological skills, two articles[28 42] reported that AHPs should be trained in responding to unexpected situations. Seven articles/guidelines[24 30 31 36–38] mentioned that AHPs should also be involved in continuing professional development training programmes. Of those articles/guidelines recognising the importance of training for patients (n=7), four articles/guidelines,[35–38] of which three were UK guidelines,[36–38] suggested that clinicians conduct a telehealth trial with those patients less familiar with technology to coach them to use technology communications prior to the consultation.

Logistical management

Logistic support was considered an integral part of the telehealth services by seven articles/guidelines (24% of all included articles/guidelines),[19 20 25 27 31 32 42] including one from a UK AHP professional body.[19]

Room, session and technical requirements

Room, session and technical requirements of telehealth consultations were detailed in 17 articles (59% of all included articles/guidelines), with six from UK AHP professional bodies.[19 22 33 36–38] Half of the articles/guidelines (n=15) provided information about the technical requirements for telehealth.[17 19 20 25 27 29 31–33 35 38 40 42 45] Eight articles informed AHPs about the room requirements,[19 20 32 33 35 36 38 42] and five articles included information about the session characteristics.[19 31 35 40 42]

The technical recommendations varied across the articles/guidelines. The availability of a reliable and high-speed internet connection was considered a necessary requirement by four articles/guidelines.[20 25 27 32] However, Wakeford *et al*[27] specified that low-speed connection is still acceptable for routine observations and interview. Four articles/guidelines mentioned the use of secure and approved platforms.[19 22 29 35]

The room requirements differed between articles/guidelines but included some common requirements. The most common recommendations for both AHPs and patients were: (1) to use a well-lighted environment;[20 32 33 42] (2) to use a reasonably private room[20 32 33 42] with minimal distraction;[20 32 42] and (3) to use a notice on the room door indicating that a consultation is taking place.[32 33 36 38] This last recommendation was mainly present in UK guidelines (n=3).[33 36 38] With regards to the session requirements, all articles/guidelines provided information about the equipment needed for consultations.

Privacy and security issues

Eighteen articles/guidelines (66% of all included articles/guidelines), including most of the UK AHP professional body guidelines (n=6),[19 23 33 36–38] discussed the aspects concerning the privacy and security of telehealth consultations. Ten articles/guidelines[21 26 31 32 36 38–42] stated that AHPs must protect their patient's privacy and ensure information security during data transmission and storage. Burns and Wall[31] specified that technology and data security should be guaranteed by all participating sites, even if they cross different health services, states and countries.[31] Eight articles/guidelines[20 23 29 32 35 38 45] reported that telehealth consultations should take place using safe and secure platforms ensuring data privacy and security. Three UK guidelines[33 36 37] specified that AHPs should not use commercial apps and private messaging services of social media platforms unless there are no alternative communication means and the benefits overweight the risks. Five articles/guidelines[32 36–38 46] provided guidance on password and authentication best practices.

Risk management and patient's safety

Aspects related to risk management and patient safety were present in 15 articles/guidelines (48% of all included articles/guidelines), four from the UK.[19 22 36 37] Additionally, two articles[19 40] reported that the procedures to follow in case of technical disruption or emergency should be

clearly outlined. To manage potential unforeseen circumstances, four articles/guidelines[19 21 24 40] stated that AHPs should ensure they have a patient's personal contact,[19 40] an alternative communication means,[24] and the physical location of the patient at the time of the consultation.[21]

Family's and/or caregiver's role

Nine articles/guidelines (31% of all included articles/guidelines),[19 20 23 25 29 31 32 34 35] of which two were UK AHP professional body guidelines,[19 23] identified the role of the patient's family and caregiver in supporting telehealth consultations.

Legislation, legal and ethical aspects

Topics pertaining to legislation, legal and ethical principles of telehealth consultations were contained in 19 articles/guidelines (62% of the included articles/guidelines), with four from UK AHP professional bodies.[19 36–38] Three articles[20 21 43] recommended AHPs to check prior to telehealth consultations whether remote consultations are permitted by law in their jurisdiction. Additionally, 12 articles/guidelines[21 25–28 31 37–39 41 44 45] reported that AHPs should be compliant with the relevant jurisdictional, local, national, institutional and professional regulations and policies governing telehealth. As telehealth regulations and policies often differ between countries and can vary within the same country between different states,[24] three articles[25 28 44] recommended AHPs to adhere to the requirements of the country/state where they physically are and to those existing in the state/country where the patient is at the time of the consultation. Six articles,[17 26–28 39 43] with none from the UK AHP professional bodies, reported that AHPs must adhere to a code of ethics.

DISCUSSION

This scoping review aimed to provide an overview of the information contained in telehealth guidelines for AHPs to identify key recommendations on the use of telehealth for AHP patient consultations.

Characteristics of included articles/guidelines

Most of the articles were published in the USA, followed by Canada and Australia. This finding may be attributable to the morphology and the geographical distribution of the resources in these countries,[47] where telehealth has been used for decades by healthcare professionals to reach remote and isolated communities. The telehealth standards proposed by these articles are also the reflection of the healthcare systems, the requirements to practice and socioeconomic values of these countries. Therefore, they may not be implemented in those nations whose healthcare systems operate differently, where the registration requirements to provide telehealth as an AHP are diverse, and in lower socioeconomic countries, which may not have the resources to use the standards from developed countries and therefore need guidance appropriately matching their own resources. This review demonstrated that telehealth is a new and emerging area of research with all the articles/guidelines in this area published in the past two decades and half of them within the last two years. Together with technological innovations, the COVID-19 pandemic seems to have driven research in this field reflecting the increased use of technology for healthcare purposes. While all the guidelines identified through the UK AHP professional bodies, or their websites, were produced in response to the COVID-19 pandemic, only five of the 21 articles identified through the database searches were. When considering those articles produced before the current pandemic, it should be noted that the demographics of the patients undertaking telehealth consultations has changed significantly due to the pandemic. All of the articles/guidelines, bar one,[20] were produced for public AHP services. However, the pandemic-driven shift has affected both public and private AHP services with remote consultations and telehealth being the norm in private sector healthcare facilities, including large hospitals and small clinics. Therefore, future guidelines should also consider the needs of private service providers to support AHPs in the possible long-term implementation of telehealth.

Most of the articles were categorised as level 5 of evidence, which corresponds to the study designs considered acceptable to achieve the objectives of this review. Most of the articles/guidelines were published to guide occupational therapists, physiotherapists and speech and language therapists with a limited number of articles/guidelines for art therapists, dietitians, orthoptists, osteopaths, prosthetists and orthotists, and chiropodists/podiatrists. There were no guidelines specifically designed for drama therapists, music therapists, operating department practitioners, paramedics and radiographers. This indicates that most of the guidelines were produced by the larger professional bodies, and this may be due to potential inequity in personnel and resources. Urgent action is required from AHP professional bodies without guidelines for telehealth as they would improve the delivery and the quality of AHP services.

Although telehealth was the most frequently used term in the literature, a variety of terminology has been used across the articles/guidelines. Therefore, there is a need to standardise terminology associated to telehealth. Most of the included articles/guidelines were not disease or clinical population specific. However, telehealth is not a one-size-fits-all solution, and its applications need to be customised to accommodate the needs of a diverse range of populations.[48] Therefore, this finding suggests that the current telehealth guidelines may not fully capture the complex care needs of specific population groups, for which telehealth consultations may be neither safe nor effective.

Implementation, financial and technical considerations

Telehealth considerations were grouped into implementation, financial and technical domains, which provided

clear and explicit identification of the gaps in the guidelines that need to be addressed.

Implementation considerations

While some articles/guidelines reported that telehealth should only be adopted for follow-up appointments,[20 31] considering that AHPs may have very limited or no capacity to conduct in-person assessments due to the COVID-19 restrictions, there is a need to identify possible compensatory measures to adopt in order to ensure that remote assessments are equally safe and effective as face-to-face evaluations in case the former option is not available.

Most of the articles/guidelines provided information related to the patient eligibility requirements; however, these indications may have led to the exclusion of certain clinical populations with more complex needs that cannot be met by telehealth. Additionally, it was suggested that the decision to offer patients telehealth appointments had to be made on a case-by-case basis[19 31] and dictated by individual professional judgement.[19 23 26 32 33] However, clinicians may attempt to stretch the technological limits of telehealth and unintendedly expose themselves to a greater risk of malpractice and patients to risk of harm. Therefore, given that the generic nature of the personal requirements left the question of the telehealth eligibility open to personal interpretation, decision aids specific for possible clinical scenarios, as those present in the guidelines from BAPO,[18] would be useful adjuncts to the AHPs' decision-making process and would help AHPs offer telehealth only to those patients for whom it is appropriate. A more general framework detailing telehealth individual, organizational and system principles, as that recently proposed by Greenhalgh *et al*,[49] would represent another valid tool to help AHPs make ethically sound decisions and offer high-quality remote consultations.

The lack of guidance for AHPs on the delivery of telehealth consultations was also clear from the limited guidance related to the clinicians' and patient's checklist.[28] However, it should be noticed that checklists for telehealth consultations may be available in the form of online resources, and they may have been missed in this study due to our search strategy.[50 51] Future research is needed to explore the essential steps patients need to complete prior to attending remote consultations, which should be incorporated into the guidelines for wider reach and for their potential to limit inconvenience during consultations and improve patients' experiences, especially for those who are less familiar with technology.

It is good practice to seek a patient's consent before any telehealth consultation, and this is also acknowledged by guidelines developed for non-AHP healthcare professionals.[52 53] Although the AHP guidelines are in line with these findings, as there was consensus about the need to gain consent from patients, there was no agreement as to how the consent should be obtained. This requires attention and clarification because obtaining appropriate consent can be the key to defending any claims of malpractice and negligence. No generalised clear instructions about the format for documentation information to follow, and the information to document were provided. Although most of the UK AHP professional bodies' guidelines reported that AHPs should record the consultation as they would do for a face-to-face appointment,[33 36–38] clear and explicit guidance on this process is needed in the UK as well as worldwide to prevent documentation deficiencies and avoid future legal problems for AHPs.

The assessment of telehealth use and effectiveness received limited discussion. This indicates that AHP service managers should implement programme monitoring strategies for AHP services, as an ongoing process of assessment. This monitoring and review are essential to ensure the appropriateness and effectiveness of a service's provision. NHS England, for example, encourage clinicians to conduct self-audit of consultations, obtain daily feedback from other staff and patients, monitor impact on their workloads, hold regular team meetings and assess the effectiveness of processes/protocols.[54]

Another telehealth aspect that has not received much attention in the existing literature and UK guidelines was the clinical and technical staff involved in the telehealth team. The involvement of a multidisciplinary team and new roles (eg, telehealth service coordinator and an AHP digital leader) in the delivery of telehealth are beneficial to establish collaborative relationships across the different AHP professions at a national and international level and promote cooperative telehealth activities.

While most of the articles/guidelines covered aspects related to the AHPs' eligibility and there was consensus that AHPs must be registered practitioners to practice telehealth, it remains controversial whether AHPs should be registered only in the state/country where they reside and/or the service is provided, or also in the jurisdiction where the patient is. Therefore, there is an urgent need to clarify the registration requirements and governance compliance for AHPs in relation to the regional jurisdictions. The lack of international telehealth regulations can limit AHPs' legal liability when telehealth is practised across state/county lines. Also, this might leave gaps, potentially allowing acts of malpractice. While telehealth limitations and barriers received limited discussion, patients need to be informed about telehealth limitations and barriers to allow them to make an informed decision.[19 21 25 26 29 32 38] Therefore, limitations and barriers should be acknowledged and recognised as an integral part of the AHP guidelines in the UK and worldwide. Appropriately setting patients' expectations in telehealth consultations would help avoid their reactions to unmet expectations (eg, disappointment and anger), enhance their compliance and telehealth experience and, subsequently, reduce AHPs' exposure to liability.

Financial considerations

There were large areas of unclarity and ambiguity across the articles/guidelines regarding the costs, reimbursement and coverage aspects of telehealth. Information

obtained from a recent freedom of information request to clinical commissioning groups (CCGs) in England identified that there are currently discrepancies in payment for AHP services between face-to-face and non-face-to-face consultations; some CCGs stated they were paying the same amount regardless of the method of delivery and some stated they were paying over fourfold more for a face-to-face appointment. Defining the time and the personnel that need to be involved in telehealth consultations may potentially clarify the telehealth service charge. Such clarifications may subsequently provide insurance companies with greater incentives to consider coverage for telehealth, which is still under debate in the current few articles/guidelines containing this aspect.

Technical considerations

With limited guidance on session requirements, for example, no information was provided about the recommended length of remote consultations, which remains unknown, and these needs to be defined for clinical safety and resource purposes. Despite variation across articles/guidelines with some common points still present, the room and technical requirements appeared to reflect the principles of privacy, security and confidentiality that were largely considered in the articles/guidelines included in the review. The requirements of a reliable and high-speed internet connection, together with safe and secure platforms, explicitly preferred to commercial apps in the UK,[33 36 37] may affect telehealth use in poor rural communities with low bandwidth and where AHP services may have a limited budget to cover the expenses of a private platform.

Although telehealth guidelines for patient consultations developed for non-AHP healthcare professionals include a risk management plan within their recommendations,[55] risk management strategies are not widely described in the AHP guidelines, and no patient safety procedure is available yet. A common plan of action needs to be developed by the AHP professional bodies, in the UK as well as in the rest of the world, to help their members cope with any unforeseen events and to mitigate the impact of these unexpected occurrences on patients to prevent or limit patient harm.[29 32 33]

It is considered best practice to engage patient's family and caregivers to ensure optimal and patient-centred care.[56] Despite this, there was a limited number of articles/guidelines that recognised the role the patient's family and/or caregiver's play in the care provision,[19 23] or mentioned the presence of either family or caregiver support as a potentially necessary in case of patients requiring physical, cognitive and emotional support.[20 29 31] In case of their unavailability or if patients are socially isolated, these vulnerable clinical populations may be excluded from telehealth, which may result in them not receiving care if telehealth is the only available option.

Most of the articles/guidelines detailing legislation and the legal aspects of telehealth stated that AHPs should comply with relevant jurisdictional, local, national, institutional, institutional and professional regulations and laws, it is still unclear whether AHPs need to adhere to the legislations in their state/country or also comply with those in place in patient's jurisdiction. Therefore, a global and generic minimum standard to practice telehealth worldwide and universal regulations and policies should be set and eventually be adapted to the different local contexts. Uniformity in telehealth regulations will contribute to facilitating insurers and policymakers to reimburse telehealth services within and across countries.

To the authors' knowledge, this is the first study to review the literature containing guidelines for the use of telehealth for patient consultations in AHP services and compared them with the guidelines developed by the UK AHP professional bodies. It offers a comprehensive identification and summary of the telehealth implementation, financial and technical considerations present in the currently available articles/guidelines. This provides AHP services, AHP professional bodies, guideline developers and policy makers with a comprehensive and detailed overview of the considerations that AHPs should be concerned about when using telehealth for patient consultations. Implementing these considerations in clinical practice could prevent and reduce risks, errors and harm that occur to patients during the provision of AHP services via telehealth and their potential consequent serious injuries and fatalities. The findings of this study have also the potential to inform the development of a framework with implementation, financial and technical considerations regarding the use of telehealth in UK AHP services. This may help UK AHP professional bodies and services adopt a common line of action and, consequently, is likely to contribute to address the existing inequalities among UK AHPs.

Potential limitations of this study include only articles written in English were examined and, as a result, relevant publications in a language other than English may have been missed. Additionally, only articles characterised by specific methodological designs containing telehealth guidelines within their abstract and/or full text were considered eligible for review. This may have led to the exclusion of articles with study designs, other than those deemed appropriate for this study, which however contained guidelines for remote consultations with patients. Similarly, the limiting of the grey literature search to the guidelines sourced from UK AHP professional bodies or their websites may have led to potentially relevant resources being missed. Although any uncertainty in data extraction and study inclusion was resolved through discussion with a second reviewer and if required the wider team, these study phases were performed independently by one reviewer, whose personal bias may have impacted these processes. Patients, public and experts in the field were not involved in any stages of the research, and therefore, the findings of this study do not represent the patient and professional user experiences of telehealth.

This scoping review has explored the currently available guidelines for AHPs using telehealth for patient consultations. The review has established that telehealth has emerged as a new area of research in the last decades, which has been boosted ever further by the COVID-19 pandemic. Although telehealth has been discussed in a considerable number of articles/guidelines, most of them were specifically designed for occupational therapists, physiotherapists and speech and language therapists, leaving the other AHPs with limited or no guidelines. This suggests the presence of inequalities among AHP groups. Similarly, some articles/guidelines have been specifically designed for certain clinical populations, and this may suggest that telehealth consultations need to be tailored to meet patients' individual needs. A great variety of terminology has been used to refer to telehealth. Although telehealth remains the most used term across the articles/guidelines, there is a need to standardise the telehealth terminology and its definitions. There was information lacking around some topics such as the assessment of telehealth use and effectiveness, telehealth barriers and limitations, the logistical management, the family's as well as caregiver's roles and the financial considerations in the included articles/guidelines. Additionally, there were some areas of unclarity and ambiguity, such as AHPs' eligibility, telehealth costs and coverage and legislation as well as legal aspects. Future guidelines should consider and provide a clearer description of these aspects as they have the potential to reduce patient harm and suffering and any consequent disabilities and deaths, thereby ensuring better patient outcomes, reducing risk of liability for clinicians and increasing financial savings for healthcare systems worldwide.

Following the results of this review, we have identified issues with the current telehealth guidelines that need to be addressed, and we recommend that the following actions be undertaken:

- Currently available AHP articles/guidelines do not adequately support AHPs delivering telehealth consultations. Future studies and guideline developers need to consider those telehealth topics lacking across articles/guidelines and address the large areas of unclarity and ambiguity present.
- Telehealth implementation considerations are considered equally as important as the technical considerations to guarantee that remote consultations do not reduce clinical benefits or create unintended risks to patients, consider and meet patients' and AHPs' needs and offer an integrated approach to clinical management.
- All of the UK AHP professional bodies' guidelines were designed to quickly respond to the need of standards for telehealth-mediated patient consultations during the COVID-19 pandemic. Therefore, the available guidelines should be reviewed to ensure they meet the long-term needs of patient consultations delivered through telehealth.
- There is a clear and immediate need to solve the existing inequalities among AHP professional bodies to avoid a direct impact on the services they offer, which inevitably affects the quality of care that their patients receive.
- AHP professional bodies should work together, in the UK as well as worldwide, to design common lines of action and telehealth guidelines.
- There is an urgent and immediate call for unilateral initiatives from organisations such as the WHO to provide universally valid guidelines for telehealth consultations to support AHP services across the world, enhance their quality and address regulation and malpractice issues arising from AHP services provided across states/countries.

CONCLUSION

This study provides an overview of the current AHP guidelines on the use of telehealth for patient consultations and compared them with the UK AHP guidance, thereby identifying the gaps between published literature and actual requirements for telehealth consultations. Results reveal that the current guidelines for telehealth have similarities as well as discrepancies in respect to the guidance for non-AHP healthcare professionals which, however, appear to be more extensive, better structured and more developed documents. Therefore, the current AHP telehealth guidelines appear not to adequately support AHPs in the delivery of remote consultations via telehealth. Future research and collaborative efforts across AHP professional bodies and the world's leading health institutions are needed to solve the areas of unclarity and ambiguity. Establishing global telehealth guidelines that can be adapted to local contexts could mitigate avoidable harm or risk of harm and limit adverse events resulting from telehealth, thereby preventing patients from receiving unsafe care and leading to improvements in quality of AHP service provision.

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Contributors All authors conceived the idea and contributed to the study design of the review. EL carried out the literature search, and CR contacted the UK allied health professional (AHP) bodies to request their guidelines. Inclusion and exclusion of full-text articles was reached by consensus by EL and AH, in case of disagreement on eligibility between the two reviewers, then the article was discussed with the other coauthors (NE, CR and NC). Data were extracted and analysed by EL. All the authors have made a significant contribution to drafting the manuscript and have seen and approved the final manuscript. EL, NE and AH contributed equally to this paper. NC is the manuscript's guarantor.

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Supplementary file 1: Search strategy: keywords and MeSH terms for systematic search of the literature

MEDLINE search strategy		
Search term	**MeSH heading**	**Free text**
Telehealth	Telemedicine Remote consultation	(Telehealth OR tele-health OR telemedicine or Tele-medicine OR telecare OR tele-care OR telehomecare OR tele-homecare OR telehealthcare OR tele-healthcare OR teleconsultation OR tele-consultation OR "video consultation" OR video-consultation OR videoconference OR video-conference OR "video conferencing" OR teleconference OR tele-conference OR telecommunication OR tele-communication OR tele-monitoring OR telemonitoring OR telerehab* OR tele-rehab* OR telecoaching OR tele-coaching OR ehealth OR e-health OR "electronic health" OR ecare OR e-care OR "electronic care" OR "digital health" OR mhealth OR m-health OR "mobile health" OR etherapy OR e-therapy OR "electronic therapy") (online OR on-line OR virtual OR internet-based OR web OR web-based OR remote OR distant OR electronic OR instant OR telematic OR interactive OR telephone OR video OR mobile OR phone OR internet OR computer OR "computer assisted" OR computer-assisted OR "computer aided" OR computer-aided) AND (rehab* OR therapy OR treatment OR care OR consultation OR counselling OR monitoring OR surveillance OR communication)
Allied Health Professional	Allied health personnel	("Allied health" OR "non-medical health-care" OR "non-medical healthcare" OR paramedical) AND (profession* OR occupation* OR personnel OR worker OR staff OR professional* OR specialist* OR practitioner* OR workforce)
Art Therapists	Art therapy	("Art therapist*" OR "art therapy")
Drama therapists		("Drama therapist*" OR artist*)
Music therapists	Music therapy	("Music therapist*" OR "music therapy")
Chiropodists/podiatrists	Podiatry	(Chiropodist* OR podiatrist* OR "podiatry")
Dietitians	Nutritionists	(Dietitian* OR dietician* OR "dietetic services" OR nutritionist*)
Occupational therapists	Occupational therapists	("Occupational therapist*" OR "occupational therapy" OR "occupational rehabilitation")
Operating Department Practitioners		("Operating department practitioner*")
Orthoptists	Orthoptics	(Orthoptist*)
Osteopaths	Osteopathic medicine	(Osteopath* OR "osteopathic medicine")

Paramedics		(Paramedic* OR “paramedical profession” OR “paramedical personnel” OR “paramedicine” OR “ambulance paramedic*” OR “ambulance staff*” OR “ambulance technician*”
Physiotherapists	Physical therapists	(Physiotherapist* OR “physical therapist*” OR physiotherapy OR “physical therapy” OR “exercise therapist*” OR “rehabilitation therapist*”)
Prosthetists and Orthotists		(Prosthetist* OR prosthetic*) (Orthotist* OR orthotic*)
Radiographers		(Radiographer* OR radiotherapy OR “radiologic technologist*”OR “radiologic technician*” OR “radiological technologist*” OR “radiology personnel”)
Speech and language therapists		(“Speech and language therapist*” OR “speech therapist” OR “speech therapy” OR “speech rehabilitation” OR “language therapist” OR “language pathology” OR “language therapy” OR “speech and language pathologist*” OR “speech therapeutic*”)
Guidelines	Guidelines	(guideline* OR guidance OR standard* OR pathway* OR protocol* OR advisor* OR summar* OR polic* OR statement* OR blueprint* OR regulation* OR circular* OR recommendation* OR dissemination* OR priority OR reform OR plan OR program* OR agenda OR “declaration”)

CINHAL search strategy		
Search term	**MeSH heading**	**Free text**
Telehealth	Telemedicine Teleconferencing	(Telehealth OR tele-health OR telemedicine or Tele-medicine OR telecare OR tele-care OR telehomecare OR tele-homecare OR telehealthcare OR tele-healthcare OR teleconsultation OR tele-consultation OR "video consultation" OR video-consultation OR videoconference OR video-conference OR "video conferencing" OR teleconference OR tele-conference OR telecommunication OR tele-communication OR tele-monitoring OR telemonitoring OR telepractice OR telerehab* OR tele-rehab* OR tele-therapy OR telecoaching OR tele-coaching OR ehealth OR e-health OR "electronic health" OR ecare OR e-care OR "electronic care" OR "digital health" OR mhealth OR m-health OR "mobile health" OR etherapy OR e-therapy OR "electronic therapy") (online OR on-line OR virtual OR internet-based OR web OR web-based OR remote OR distant OR electronic OR instant OR telematic OR interactive OR telephone OR video OR mobile OR phone OR internet OR computer OR "computer assisted" OR computer-assisted OR "computer aided" OR computer-aided) AND (rehab* OR therapy OR treatment OR care OR consultation OR counselling OR monitoring OR surveillance OR communication)
Allied Health Professional		("Allied health" OR "non-medical health-care" OR "non-medical healthcare" OR paramedical) AND (profession* OR occupation* OR personnel OR worker OR staff OR professional* OR specialist* OR practitioner* OR workforce)
Art Therapists	Art therapy	("Art therapist*" OR "art therapy")
Drama therapists		("Drama therapist*" OR artist*)
Music therapists	Music therapy	("Music therapist*" OR "music therapy")
Chiropodists/podiatrists	Podiatrists	(Chiropodist* OR podiatrist* OR "podiatry")
Dietitians	Dietitians Dietetic technicians, registered	(Dietitian* OR dietician* OR "dietetic services" OR nutritionist*)
Occupational therapists	Occupational therapists	("Occupational therapist*" OR "occupational therapy" OR "occupational rehabilitation")
Operating Department Practitioners		("Operating department practitioner*")
Orthoptists		(Orthoptist*)
Osteopaths	Osteopaths Osteopathic medicine	(Osteopath* OR "osteopathic medicine")

Paramedics	Emergency medical technicians	(Paramedic* OR “paramedical profession” OR “paramedical personnel” OR “paramedicine” OR “ambulance paramedic*” OR “ambulance staff*” OR “ambulance technician*”
Physiotherapists	Physical therapists	(Physiotherapist* OR “physical therapist*” OR physiotherapy OR “physical therapy” OR “exercise therapist*” OR “rehabilitation therapist*”)
Prosthetists and Orthotists		(Prosthetist* OR prosthetic*) (Orthotist* OR orthotic*)
Radiographers	Radiologic technologists	(Radiographer* OR radiotherapy OR “radiologic technologist*” OR “radiologic technician*” OR “radiological technologist*” OR “radiology personnel”)
Speech and language therapists	Speech-language patthologists	(“Speech and language therapist*” OR “speech therapist” OR “speech therapy” OR “speech rehabilitation” OR “language therapist” OR “language pathology” OR “language therapy” OR “speech and language pathologist*” OR “speech therapeutic*”)
Guidelines	Practice Guidelines	(guideline* OR guidance OR standard* OR pathway* OR protocol* OR advisor* OR summar* OR polic* OR statement* OR blueprint* OR regulation* OR circular* OR recommendation* OR dissemination* OR priority OR reform OR plan OR program* OR agenda OR “declaration”)

Supplementary file 2: Additional results

Implementation considerations

Purpose telehealth can be used for

One study reported that assessments should be done in person where possible and regulations allow,(1) while two studies reported that AHPs should conduce assessment remotely only if deemed appropriate.(2,3) Bierman et al. (4) stated that in some US states telehealth can be only used in case of an already existing relationship between the patient and the provider and, therefore, in case of follow-up appointments. Some discussed the use of telehealth for group sessions,(5,6) while it was stated that it should not be used for urgent (7,8) or acute care needs (9) and in emergency situations.(7,8,10)

Patient eligibility

Three articles/guidelines,(7,8,11) two of them from the UK AHP professional bodies,(7,12) reported further factors that should be considered while assessing for telehealth eligibility during the COVID-19 pandemic: 1) presence of suspected or confirmed COVID-19 diagnosis;(7,12) 2) increased risk of COVID-19 complications;(7,11,12) 3) patient's willingness to avoid face-to-face consultations to limit exposure to COVID-19;(7,12) 4) significant concerns and increased anxiety related to in-person consultations.(7,12) Three UK AHP professional body guidelines (7,8,12) provided exclusion guidelines to determine who is not eligible and appropriate for telehealth such as 1) patient's inability to give informed consent;(7) 2) presence of complex care needs;(7,12) 3) patient's high risk of experiencing difficulties during

virtual consultations;(7,12) 4) patient's inability to fit brace or fit stocking himself with video support;(8) 5) lack of sufficient information about the patient to allow clinicians to make clinical judgment about the treatment plan.(7,12) The British Association of Prosthetists and Orthotists (BAPO) also specified the clinical conditions where equipment items cannot be issued remotely.(8) In case of the presence of potential exclusion criteria, it was stated that specific compensation arrangements (e.g., technology training and family support during consultations) or alternatives to remote consultations (e.g., face-to-face visits) need to be discussed.(3,13)

Clinicians' and patient's checklist

Most of the articles/guidelines (n=8) provided a list of information to gain before the visit.(3–5,9,14) Six specified what should be done during a consultation (3–5,9,11,14) and four articles/guidelines,(3,8,9,15) three of them from the UK AHP professional bodies,(3,8,15) clarified what should follow a remote consultation. One UK AHP professional body guideline (16) encouraged AHPs to screen the patient for COVID-19 prior to commencing the consultation.

Patient information

Wong et al. (9) and Haldeman et al. (5) reported that consent can be given verbally, while Bierman et al. (4) stated that consent can be either verbal or written. RCSLT (3) accepted consent made in writing or given verbally, but also stated that patients give implicit consent by accepting to join the telehealth consultation.(3) This is in line with two other UK AHP professional body guidelines.(10,12) Only Bierman et al. (4) explained that the consent can be given by a person other than the patient himself who has, however, the authority to make health decision on patient's behalf.(4)

Confidentiality

Six articles/guidelines (5,10,12,17–19) reported that AHPs should follow the existing organisational, professional, regional or national policies and regulations pertaining to patient confidentiality. Three UK AHP professional body guidelines (7,10,12) explained that sensitive data or confidential information needs to be safeguarded at all times as it would be done in case of face-to-face appointments. In order to achieve this, AHPs are recommended to ensure confidentiality for the synchronous and stored data.(5,17,18,20) RCSLT (3) stated that the single telehealth provider is also responsible for the continuous monitoring and mitigation of risks of breach of confidentiality.(3)

Eligibility of AHPs

Three articles/guidelines,(2,14,21) stated that AHPs providing telehealth should be registered in the state where they are located as well as in the jurisdiction where the patient resides. In contrast, four studies (13,20,22,23) reported that the AHPs should only be registered either in the state where the patient resides (20,22) or in the jurisdiction where the service is provided.(23,24) Some articles also indicated that AHPs should also be competent around the use of telehealth for remote consultations.(1,13,17,18)

Logistical management

Burns et al. (25) and Wong et al. (9) reported that administrative staff play an essential role in scheduling appointments and reminding patients of the equipment necessary for the consultations. Six studies (3,14,21–23,25) reported that telehealth services should have the support of technical assistance, at home as well as at all sites (22)

and during both the set-up and the consultation stage.(3) Ben-Aharon et al. (14) also stated that a patient service support should be available.

Room, session and technical requirements

The use of a laptop or desktop computer was recommended for patients by three articles.(3,7,9) RCSLT (3) also recognised smartphones as possible devices to use for consultations, while Collie et al. (13) was open to any means of communication. Four articles/guidelines (9,14,22,25) promoted the use of a camera, which should be placed at the shoulder/eye level.(9,22) Four articles/guidelines (11,14,21,22) also included microphone as one of the requirements and two articles/guidelines suggested the use of headphones/headset.(14,15)

Two studies indicated that the room should be uncluttered and spacious to allow the patient to move safely.(1,9)

Simila et al. (22) and RCSLT (3) recommended AHPs to ensure that patients have all the equipment necessary for the session. Three articles/guidelines (1,22,25) encouraged AHPs to provide patients with the equipment if this is required. Simila et al. (22) and Collie et al. (13) recommended AHPs to allow adequate time for the consultation to take place; however, no specific indication was given about the duration of the appointment.

Privacy and security issues

The College of Podiatry,(12) Meredith et al.,(19) the Chartered Society of Physiotherapists (10) and Wong et al. (9) encouraged AHPs to set strong passwords.

The adoption of authentication protocol was recommended by Meredith et al.,(19) the British and Irish Orthoptic Society (BIOS) (7) and Wong et al. .(9) Additionally, six articles/guidelines (3,7,10,12,13,19), most of which were UK AHP professional body guidelines (n=4), provided recommendations on data storage. There is consensus among the articles/guidelines that personal and confidential information should be stored securely.(3,7,10,12,13,19) RCSLT (3) stated that the responsibility of confidential data storage falls on the single telemedicine provider.(3) Three UK AHP professional body guidelines (7,10,12) recommended that AHPs do not store personal and confidential information on their own devices unless it is absolutely necessary. Access to patient's data was explored by three articles/guidelines,(4,10,12) two from the UK AHP professional bodies,(10,12) which stated that data must be accessible and disclosed only to those people having the right to access patients' information.

Risk management and patient's safety

Bamaga et al. ,(6) Meredith et al. (19) and the World Federation of Occupational Therapists (18) stated that protecting patient's safety is a priority for AHPs delivering telehealth consultations. In order to ensure patient safety, Lee et al. ,(26) while RCSLT (3) and Ben-Aharon et al. (14) respectively suggested the implementation of an ongoing and periodic risk assessment as well as management programme. Risk management strategies for telehealth consultations varied across articles/guidelines. Only Middleton et al. (1) and RCSLT (3) encouraged AHPs to conduct a risk assessment prior commencing a consultation. According to Middleton et al. ,(1) this should comprise an environmental risk assessment to ensure that the place is safe.(1)

Family's and/or caregiver's role

Three articles/guidelines (1,9,16) reported that clinicians may explore, following patient consent, the possibility of involving patient's family and caregiver in setting up a consultation and facilitating its delivery. Burns et al. ,(25) Quigley et al. (2) and Ben-Aharon et al. (14) specifically stated that family and/or caregiver support may be required during both assessment and treatment in case the patient needs physical, cognitive and emotional support.(2,14,25) Furthermore, two articles/guidelines (3,6) clarified that family and caregivers should provide support following clinicians' recommendations. Two articles/guidelines (3,14) recognised the importance of establishing good communication with the family and/or caregiver that should be kept engaged and informed about patient's progress.(14) One guideline from a UK AHP professional body (3) recommended clinicians to coach families so that they can help patients carry out therapeutic activities during their free time.

Legislation, legal and ethical aspects

Of the four UK AHP professional body guidelines providing information about the legislation and the legal aspects governing telehealth, three (7,10,12) recommended clinicians to refer to the Health and Care Professions Council (HCPC) standards. Eight articles (2,3,5,11,14,18,21,27) provided information pertaining the professional liability coverage for telehealth consultation. Denton et al. (21) and Quigley et al. (2) clearly stated that it is imperative for AHPs to have professional liability insurance in each state where they provide telehealth.(2,21) Haldeman et al. ,(5) Doll et al. (11) and the World Federation of Occupational Therapists (18) encouraged AHPs to check whether their professional liability insurance policy adequately covers telehealth services. RCSLT (3) confirmed that their annual membership includes, as part of the insurance

provision, professional indemnity and malpractice cover for telehealth.(3) Hailey et al. (27) stated that AHP's should adhere to a code of ethics which are the same as that for face-to-face consultations and Lee et al. (26) stated that they include the principles of autonomy and social justice.

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Supplementary file 3. Patient's eligibility criteria for telehealth consultation reported in the articles/guidelines included in the review.

Patient eligibility criteria	Authors
Diagnosis and clinical presentation complexity	Jacobs et al. (1), Bierman et al. (2), Ben-Aharon et al. (3)
Age	Ben-Aharon et al. (3), Doll et al. (4)
Language skills and cultural background	Collie et al. (5), Simila et al. (6), World Federation of Occupational Therapists (7), Jacobs et al. (1), Burns et al. (8)
Hearing and visual abilities	Burns et al. (8)
Physical function	Denton et al. (9), Burns et al. (8), Quigley et al. (10), Wong et al. (11)
Cognitive function	Denton et al. (9), Burns et al. (8), Middleton et al. (12), Quigley et al. (10), Doll et al. (4)
Mental health status	Collie et al. (5), NHS England and NHS Improvement (13)
Sufficient technological skills	Collie et al. (5), Jacobs et al. (1), Middleton et al. (12), Wong et al. (11)
Availability of technology devices and access to internet	Wong et al. (11), Collie et al. (5), Middleton et al. (12), Doll et al. (4)
Willingness to participate to remote consultations	Denton et al. (9), Burns et al. (8)
Adequate home setting	Bierman et al. (2), Middleton et al. (12)
Family's and/or caregiver' availability to provide support and facilitate consultations if needed	Burns et al. (8), Middleton et al. (12), Quigley et al. (10), Wong et al. (11)

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Supplementary file 4. Clinicians' checklist items to follow before, during and after a consultation according to the articles/guidelines included in the review.

Clinicians' checklist items	Authors
Before a consultation	
Identify yourself and your role	Bierman et al. (1), Quigley et al. (2),
Verify patient's identity	Bierman et al. (1), Middleton et al. (3), Quigley et al. (2), Wong et al. (4)
Obtain patient's consent	The Institute of Osteopathy (5), RCSLT (6), Wong et al. (4)
Announce who is in the meeting and ask the patient to introduce anyone observing the consultation from his end	The Institute of Osteopathy (5), Wong et al. (4)
Check whether there are alternative communication means case of technology issues or emergency and provide the patient with their alternative contact details.	Bierman et al. (2018), Wong et al. (4)
Check that the audio and video conferencing devices are working and positioned properly	Wong et al. (4), Middleton et al. (3)
Ensure that the room is adequate for the consultation	Middleton et al. (3)
Ensure that the room does not contain any distractions	RCSLT (6)
Ensure that the equipment needed for treatment or assessment is within reach	Middleton et al. (3), RCSLT (6)
Check whether family's or caregiver's support is available if needed	Middleton et al. (3)
Ensure that the information given to the patient has been fully and correctly understood	Meredith et al. (7), The Institute of Osteopathy (5), RCSLT (6)
Ensure beforehand to have access to the patient notes and any other relevant documentation	The Institute of Osteopathy (5)
During a consultation	
Take patient's history including patient's demographics, clinical symptoms, psychosocial information and ask the patient whether there have	The Institute of Osteopathy (5), Bierman et al. (1), Middleton et al. (3), Wong et al. (4)

been any changes in the clinical condition or any adverse event (e.g., fall)	
Conduct the assessment	Bierman et al. (1), Ben-Aharon et al. (8), Middleton et al. (3), Doll et al. (9), Wong et al. (4)
Carry out the treatment	Ben-Aharon et al. (8), Bierman et al. (1), Doll et al. (9)
Explore patient's and his family's expectations	RCSLT (6)
Establish a plan	Wong et al. (4)
After a consultation	
Summarise the key points	The Institute of Osteopathy (5)
Ask the patient whether there are any questions	The Institute of Osteopathy (5), RCSLT (6)
Determine whether the next session will be remote through discussion with the patient	The Institute of Osteopathy (5), Wong et al. (4)
Arrange the next appointment and send the patient instructions or resources as appropriate	BAPO (10), RCSLT (6)

Abbreviations: RCSLT, The Royal College of Speech and Language Therapists; BAPO, The British Association of Prosthetists and Orthotists.

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