Title: Exploring Adults Patients' Perceptions and Experiences of Telemedicine Consultations in Primary Care: A Qualitative Systematic Review

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Conceptualization	Ideas; formulation or evolution of overarching research goals and aims.	X
Data Curation	Management activities to annotate (produce metadata), scrub data and maintain research data (including software code, where it is necessary for interpreting the data itself) for initial use and later reuse.	X
Formal Analysis	Application of statistical, mathematical, computational, or other formal techniques to analyze or synthesize study data.	X
Funding Acquisition	Acquisition of the financial support for the project leading to this publication.	
Investigation	Conducting a research and investigation process, specifically performing the experiments, or data/evidence collection.	X
Methodology	Development or design of methodology; creation of models	X
Project Administration	Management and coordination responsibility for the research activity planning and execution.	X
Resources	Provision of study materials, reagents, materials, patients, laboratory samples, animals, instrumentation, computing resources, or other analysis tools.	X
Software	Programming, software development; designing computer programs; implementation of the computer code and supporting algorithms; testing of existing code components.	X
Supervision	Oversight and leadership responsibility for the research activity planning and execution, including mentorship external to the core team.	
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ABSTRACT.

The COVID-19 pandemic transformed a gradual uptake of telemedicine, into a sudden worldwide implementation of telemedicine consultations. Primary care is a particular area affected and one where telemedicine consultations are expected to be the future. However, for effective long-term implementation it is vital that patient perceptions and experiences are understood. The aim of this qualitative systematic review was to explore the perceptions and experiences of adults who have used telemedicine consultations in primary care. Studies were identified through a search of four electronic databases (MEDLINE, EMBASE, CINAHL, and CENTRAL) alongside reference list and citation searches. Quality assessment was conducted using the CASP checklist and data was synthesized using a simplified approach to thematic analysis. From 2492 identified records, ten studies met the eligibility criteria all of which were judged as either good or moderate quality. Three themes were identified which were potential benefits, potential barriers, and beneficial prerequisites for telemedicine consultations in primary care. Within these themes, sixteen sub-themes were identified with examples including accessibility and convenience for potential benefits, lack of face-to-face interaction and impersonal consultations for potential barriers, and continuity of care for beneficial prerequisites. Analysing these subthemes, four main recommendations for practice can be made which are to utilise continuity of care, offer both video and telephone consultations, provide adequate support, and that healthcare professionals should demonstrate an explicit understanding of the patient's health issues. Further research is needed to explore and expand on this topic area and future research should be viewed as a continuous process.

Key Words: Telemedicine, Primary Health Care, General Practice, Qualitative research (Source: MeSH-NLM).

This review was not registered

INTRODUCTION.

Telemedicine is a general term covering various forms of healthcare that are delivered remotely via telecommunication.[1,2] Since the term originated, various other terms such as telehealth, eHealth, and telecare have been used, with these mostly being used interchangeably within the literature.[1–4]

The potential advantages of telemedicine for both patients and healthcare systems are vast and are well discussed throughout the literature.[5] These potential advantages include increased access and reach of healthcare, convenience, and reduced costs.[6,7] Telemedicine does still have disadvantages such as difficulties developing a patient-physician relationship, technological obstacles, and inconsistencies with implementation.[8,9] Nevertheless, as these disadvantages are being addressed with various methods whilst advantages become more established, questions are moving beyond clinical and cost effectiveness of telemedicine into other areas such as patient perceptions.[10]

Over recent years telemedicine use has been gradually increasing with benefits shown in a vast range of areas such as surgery, diabetes, and geriatrics.[3,7,11,12] Despite this, overall uptake has remained low.[13] However, during the COVID-19 outbreak, face-to-face interaction had to be minimized, transforming this gradual uptake into sudden worldwide implementation of telemedicine.[14,15] Although this abrupt implementation affected all forms of telemedicine, some of the biggest changes to day-to-day practice were seen in telemedicine consultations, with these changes comprising of significant uptake rates, additional funding, and telemedicine becoming a fundamental component of healthcare rather than just an adjuvant.[16–19] Inadvertently, this unexpected mass implementation showcased the advantages of embedding telemedicine into healthcare on a large scale, particularly telemedicine consultations.[15,20]

Primary care (PC) encompasses services which provide the first point of contact in a healthcare system, and it is a particular area in which telemedicine consultations are expected to be widely utilised in the future, with them anticipated to represent one of the biggest changes to working practices.[16,21] Telemedicine consultations in PC became standard practice during the pandemic. This is shown by the appointments which were face-to-face or via telemedicine consultations in General Practice in England changing from 79.6% and 14.46% respectively during December 2019, to 46.79% and 48.14% during April 2020, to 54.77% and 41.04% during April 2021.[22] This trend of a significant abrupt increase followed by a slightly lower but sustained increase in telemedicine consultations in primary care was also seen in many countries such as the US, Australia, and Canada.[21,23,24] The acute increase in telemedicine is further demonstrated by telemedicine consultations in the US increasing from 1.1% in 2018-2019 to 35.3% in the second calendar quarter of 2020.[25] The view that telemedicine consultations are the future of PC was fairly well established before the pandemic, but it was greatly enhanced by the substantial benefits shown during the COVID-19 outbreak.[26,27] However, to effectively implement telemedicine into PC in the long term, certain areas such as patient perceptions need to be explored further.[6]

Patient satisfaction is a vital indicator of how healthcare is meeting patient expectations, acting as both an influential motivator and stressor to the development and improvement of healthcare services.[28,29] Additionally, continuous active involvement and engagement of patients in healthcare has been associated with improved outcomes and patient experiences, with patient participation in decision making becoming a political necessity.[28,30,31] The importance of patient perceptions is further demonstrated by the key healthcare principle of person-centered care, as to deliver person-centered care the patient perspective must be explored.[31]

Patient perceptions of telemedicine are typically assessed as patient satisfaction in the literature, which usually relates to quantitative assessment measures. However, patient perceptions and experiences are complex and beyond any survey or predefined criteria.[32] Additionally, many studies only assess patient perceptions as a secondary consideration. These factors often combine to result in superficial findings that only discuss the well-documented benefits rather than interviewing patients in-depth. Another concern is primary research often assesses clinician and patient perceptions together, resulting in some studies prioritising the clinician's perceptions and neglecting detailed analysis of patient perceptions.[33]

To assess current literature and the feasibility of a review, an initial scoping search was conducted. Common well-discussed aspects of telemedicine that were mentioned in numerous studies were convenience, saving time, and a preference for face-to-face consultation.[34–41] Other important themes which are not as well acknowledged also arose, such as patient perceptions of the patient-physician relationship in telemedicine.[35,36,39] Although no comprehensive analysis was performed, the scoping search showed the literature was available to generate and explore themes to help better understand the patient perspective, which can then lead to recommendations for improving practice.

Several reviews have studied patient perceptions and experiences of telemedicine and the consensus is patient satisfaction is high for telemedicine, however, the number of reviews studying patient perceptions and experiences of telemedicine in PC is significantly less.[28,42,43] Reviews that relate to this topic area were assessed and multiple issues were identified. In several of these reviews, patient perceptions were not the main focus with perceptions only being assessed quantitatively.[44,45] Thus, findings were minimal with analysis being superficial, consisting mostly of naming factors without thematic exploration. Further issues included reviews with narrow scopes meaning evidence was limited, therefore, narrative analysis of patient perceptions was also limited.[46] These issues highlighted a gap in the literature for a review which assess exclusively patient perceptions and experiences of telemedicine consultations in PC, utilising qualitative research to explore perceptions in a greater depth.

This systematic review aims to explore the perceptions and experiences of adults who have used telemedicine consultations in a PC setting. To achieve this, key aspects that relate to the perceptions and experiences of adults who have used telemedicine consultations in a PC setting will be identified, common themes for these perceptions and experiences will be generated using these key aspects, and finally the review will explore how the identification of these themes can be used to benefit future practice.

METHODS

A comprehensive approach to searching was taken for this review with both the PRISMA and ENTREQ checklists being used throughout to improve reporting.[47,48] The review protocol and the checklists can be found in Appendices 1-3.

Eligibility Criteria

The SPIDER tool was utilised to develop the review question, eligibility criteria, and search strategy.[49]

Sample: Studies were included if they assessed adults (18 years and older) in PC, whilst studies only assessing or focusing on children would be excluded.

Phenomenon of Interest: The phenomenon of interest was adjusted from any form of telemedicine in PC, to telemedicine consultations in PC to increase the review's feasibility whilst lowering the heterogeneity of included studies to facilitate thematic analysis. Studies were thus included if they were assessing telemedicine consultations in PC. The exclusion criteria included studies not based in PC, not primarily focused on telemedicine, and studies focused on telemedicine for a specific medical condition or for monitoring.

Design: Non-interventional qualitative or mixed-method studies of any theoretical framework were included.

Evaluation: Studies assessing patient perceptions and experiences of telemedicine consultations in a PC setting were included. If a study did not focus on patient perceptions or only focused on clinician's perspective, it was excluded. When both patient and physicians' perceptions were assessed, results had to be clearly reported separately for inclusion.

Research type: Qualitative and mixed-method studies were included whilst purely quantitative studies were excluded. Mixed-method studies were however excluded if the qualitative aspect was minimal or there was a clear and significant imbalance in the weighting of the quantitative and qualitative aspects.

Information Sources

Four electronic databases were searched which were MEDLINE via OvidSP (1946 to June 25, 2021), EMBASE via OvidSP (1974 to 2021 June 25), CINAHL via EBSCO (1981 to 2021), and CENTRAL (Issue 6 of 12, June 2021). Databases were last consulted on June 28, 2021. Reference list and citation searching (using Google scholar) was also conducted for all included studies. This consisted of all references and citations for each included study being screened against the eligibility criteria. All results from both searches were directly exported to the reference management software EndNote.[50]

Search Strategy

The review question was preliminarily divided into the following concepts: telemedicine, PC, and perceptions/experiences. Scoping searches resulted in significant numbers of irrelevant results, so the concept of 'perceptions/experiences' was refined to 'patient perceptions/experiences' and the additional concept of qualitative research was added. After further scoping searches, free-text terms and relevant index terms/subject headings for each database were used alongside proximity searches to improve strategy effectiveness. The search strategy was trialed on each database and adjusted accordingly. The same search strategy was used for each database, and these can be found in Appendices 4-7.

Selection Process

Titles and abstracts were initially screened against the eligibility criteria, followed by full text screening.[51,52] Deduplication was done using the duplicate identification tool in EndNote then manually checked. If during this stage information was missing, the study authors would have been contacted and where there was no response,

the studies would have been excluded and labelled as 'potentially relevant'.[51] As this review was conducted for a master's dissertation, study selection along with all other stages were conducted by a single reviewer and this is a recognised limitation of the review.

Data Collection

Data was extracted from all study sections using a standardised data extraction form, developed by adapting a pre-existing form whilst using the Centre for Reviews and Dissemination guidelines.[51,53] The extraction form was then piloted and refined accordingly. Data extraction fields consisted of study details and context, participants, intervention, design/methods, findings, and other information. A complete list of the data items extracted can be found in Appendix 8. As with the other steps of this review, data extraction was conducted by a single reviewer and if data was missing the study authors would be contacted but as no missing data or inconsistencies were experienced, no authors were contacted.

Quality Assessment

To critically appraise the included studies, the CASP checklist for qualitative research was used.[54,55] The CASP checklist consists of ten major items which assess the studies according to the validity of results, what are the results, and how will the results help locally.[55] Studies were assessed against the sub-elements and then these decisions were used to make a judgement of either 'Yes', 'No', or 'Cannot tell' for each major item.[55] Six major items from the CASP checklist (statement of aims, recruitment strategy, data collection, data analysis, statement of findings, and value of the research) were used to determine the overall quality assessment as outlined by Salmon[56].[55] This combined approach was taken as it produces a more simplified assessment whilst ensuring the most important aspects for determining study quality are considered. The overall quality was determined as 'good quality' if all items were judged to be 'Yes', 'moderate quality' if one to two items were judged to be 'No' or 'Cannot tell', and 'poor quality' if three or more items were judged to be 'No' or 'Cannot tell'. The quality assessment stage was conducted by a single reviewer due to the reason previously mentioned.

Data Synthesis

Data was synthesised using a simplified approach to thematic analysis as described by Aveyard,[54]. Thematic analysis was chosen as it is a highly flexible approach, whilst also being well suited to exploring perspectives and developing new insights.[57] Aveyard's,[54] specific approach was used as it was developed considering aspects relevant to the review such as, limited resources, being conducted by a single reviewer, and not requiring expertise beyond a postgraduate level. The simplified thematic analysis consisted of summarising article content with the use of tables, identifying themes, then developing, naming, comparing, and scrutinising these themes.[54] Data was coded line-by-line using an inductive approach with studies coded into pre-existing concepts and new concepts developed when required. Data synthesis was conducted by a single reviewer, however, to reduce this limitation all steps were performed at least twice with frequent review. Due to limited resources, software programs were not used but it was not felt this impacted the process.

Subgroup and sensitivity analyses were not performed.

Ethics

As this is a systematic review, a student declaration alongside a risk assessment form signed by the reviewer and dissertation supervisor constitutes ethical approval as outlined by the University of Sheffield guidelines.

RESULTS.

Study Selection

The search strategy produced 1833 unique records which after initial screening of titles and abstracts left twenty-three records. Full-text screening of these records led to the identification of ten records for inclusion in this review. The breakdown of the study selection process can be seen in **Figure 1** and the reasons for exclusion for the thirteen studies that reached full text screening can be found in Appendix 9.

Study Characteristics

The main characteristics for included studies are presented in **Tables 1 and 2**. As previously discussed, for the studies that were mixed-method studies, only the qualitative aspects of the study have been considered in this review.

Quality Assessment

Of the ten included studies, eight studies,[34–36,58–62] were considered 'good quality' whilst the two remaining studies,[63,64] were considered 'moderate quality'. One of the 'moderate quality' studies,[63] was judged to be of the lowest quality due to inadequate recruitment and data collection as it used retrospective data that was not collected for research purposes. The other 'moderate quality' study,[64] was judged as 'unclear' for data analysis as not enough information was provided. The results for all CASP checklist major items for each study are presented in **Table 3**, whilst a more detailed table which includes sub-elements is outlined in Appendix 10.

Findings

Three overall themes were identified and developed which are potential benefits, potential barriers, and beneficial prerequisites for telemedicine consultations. Within these three themes, sixteen sub-themes were also identified. The results from individual studies can be found in Appendix 11 which is a table listing the existing themes from included studies. A table listing all the studies that contributed to each theme is outlined in Appendix 12.

Theme 1: Potential Benefits of Telemedicine Consultations

Accessibility

Improved accessibility was a very common sub-theme being identified in nine studies,[34–36,58–62,64] with it being viewed as both an influencing and motivating factor for implementation of telemedicine consultations in PC. Another perception was that there was increased appointment availability which enabled a more prompt response whilst giving healthcare professionals (HCPs) more time to spend with patients. However, in one study,[62] patients raised concerns about telemedicine consultations reducing accessibility for the elderly, especially if the system is not suitable for this demographic and becomes overused by younger patients. This is an important note for practice that if telemedicine consultations are ineffectively implemented, the potential benefit of improving access might not only be lost but result in reduced accessibility.

Equitable/Fair access

Moving beyond just improving accessibility, patients in three studies,[36,58,63] expressed views of telemedicine consultations creating more equitable access to PC. This was achieved by telemedicine consultations resulting in a fairer ability to access care for those finding face-to-face consultations difficult whilst enabling clinicians to judge which patients require face-to-face consultations.

Convenience

Greater convenience was identified as a potential benefit in seven studies,[34–36,58,59,63,64]. Common aspects which improved convenience were reduced travelling, saving time, and not missing work, with the latter even being described as potentially improving access for individuals with previously low engagement with healthcare.

Improved efficiency

The sub-theme of improved efficiency arose in five studies,[35,36,58,59,63] with patients describing various ways they believed telemedicine consultations would make PC more efficient. Generally, all these points correlated to patients viewing telemedicine consultations as better use of resources and a way of preventing ineffective use of them such as removing unnecessary in-person appointments. The point of removing unnecessary appointments links directly to the sub-theme of equitable access, as removing 'timewasters' was one of the ways patients perceived telemedicine consultations creating more equitable access. This helps to demonstrate how many of the identified sub-themes in this review are interlinked. Furthermore, improved efficiency due to telemedicine consultations has significant relevance to practice as it is a potential solution to the excessive demands on primary care which are thought to be negatively affecting the quality of care.[65,66]

Lower threshold for seeking care

Telemedicine consultations lowering the threshold for seeking care was a sub-theme identified in four studies,[34,59,63,64]. Although this can be viewed as beneficial for patients, if the threshold becomes too low it could cause excess demand, negating the potential benefits. Thus, clear guidance should be available for its appropriate use.

Improved care for minor conditions or adjuvant to care

In four studies,[35,59,62,64] several points were made by patients about how rather than implementing telemedicine consultations for all consultations, a particular focus should be on minor conditions. Furthermore, patients from two studies,[36,61] described how telemedicine consultations should be an adjuvant to in-person care as the true benefits were as a supplement to face-to-face consultations and not as a replacement.

As with several of the other potential benefits, this sub-theme does not lead to a definitive recommendation for practice. However, the value of identifying the potential benefits is by recognising them, they can be promoted and protected when developing telemedicine consultations for long-term implementation in PC.

Theme 2: Potential Barriers to Telemedicine Consultations

Lack of face-to-face and physical interaction

A lack of face-to-face and physical interaction was one of the most common barriers with the sub-theme arising in nine studies,[34–36,58–61,63,64]. Concerns around not being seen in person or adequately examined were prevalent, with these in-person consultation aspects often giving patients reassurance that HCPs had conducted an effective assessment of health. Thus, these concerns represented a major way patients felt the lack of face-to-face and physical interaction would negatively affect care. Further worries included a loss of nonverbal communication and some patients describing difficulties discussing mental health issues without face-to-face interaction.[58] However, the effects of a lack of face-to-face interaction could be lowered by using video consultations rather than PC practices solely relying on telephone consultations as their only form of telemedicine.[59]

Impersonal consultations

Heavily interlinked to the previous sub-theme, the potential barrier of impersonal consultations arose in seven studies,[34–36,58–60,64] with patients describing telemedicine consultations as a less personal approach and a few reported feeling uncomfortable with the approach. Not all patients had this view with some patients finding

telemedicine consultations were more focused and personal, although this was only reported by a small minority of patients.[35] A further point for this sub-theme was several patients related impersonal consultations to not having an existing relationship with the HCP. Therefore, this barrier could be addressed by utilising pre-existing relationships with continuity of care.

Difficulties with communication

Feelings of being unable to effectively communicate health issues when using telemedicine consultations were expressed by patients in five studies,[35,58–60,63]. Certain patient groups were found to be particularly affected including the elderly, those with mental health issues, and patients with hearing impairments. Contrastingly, a few patients felt more comfortable communicating in telemedicine consultations as they felt more relaxed.[58,63]

Technological concerns

Certain forms of telemedicine consultations, such as video consultations, may require a more advanced level of technological experience and concern about this aspect was identified in six studies,[34–36,60,62,63]. The concern was mostly surrounding technological challenges the elderly may face when using telemedicine consultations that have a high demand on potential users. Further sub-theme development highlighted various ways to address this concern including providing a telephone consultation alternative to those with lower digital literacy and ensuring adequate support is available.[64]

Confidentiality/Privacy concerns

Several patients across three studies,[35,36,58] expressed feelings of confidentiality being partly compromised when using telemedicine consultations. Most patients related this concern to not being able to achieve privacy at work which meant they were reluctant to properly discuss their health issues, making consultations ineffective.[35,36,59] A potential solution to this, and one suggested by patients during interviews, is for workplaces to have multifunctional private rooms in which telemedicine consultations could be conducted.

Concern of being overlooked

Patients in four studies,[58–60,63] described various concerns about being overlooked during telemedicine consultations as they felt the approach was intended to prevent patients from having face-to-face consultations. Therefore, to avoid patients feeling dismissed, HCPs need to demonstrate an understanding of the patient's health issues and clearly explain why a face-to-face consultation is not required.

Difficulties with the uncertainty of consultation timings

Difficulty with the uncertainty of consultation timings, particularly considering work, was a small sub-theme only being identified in two studies,[58,63]. However, this barrier can be overcome by methods such as more precise consultation timing periods.

Theme 3: Beneficial Prerequisites for Telemedicine Consultations

Continuity of care

Telemedicine consultations being conducted by HCPs who have an existing relationship with the patient was described as a beneficial prerequisite in six studies,[34–36,58,61,64]. Many patients believed having familiar HCPs was vital for communication during telemedicine consultations. This continuity of care as a prerequisite for telemedicine consultations can further be used to overcome several of the previously identified barriers, including the lack of face-to-face interaction, impersonal consultations, and communication difficulties. Two more relevant points which emerged for this sub-theme were the value of the importance of continuity of care to patients could vary depending on the medical complexity, and rapport could still be built if there was no previous relationship, but it was more difficult.[35,59]

Provide support

The beneficial prerequisite of providing support was discussed by patients in three studies,[35,61,62]. Patients expressed worries about people being excluded from PC services if adequate support is not provided. Additionally, this prerequisite can directly address technological concerns as a barrier to telemedicine consultations.

Clear process

Although only identified in two studies,[58,62] a prerequisite of having a clear process for telemedicine consultations was described as a critical aspect for successful implementation. A clear process involved having adequate and tailored information available to patients about how telemedicine consultations would function.

DISCUSSION.

Summary of Key findings

Six potential benefits of telemedicine consultations in PC were identified with many being interlinked. The two most prevalent benefits were improved accessibility and convenience, with the others being improved care for minor conditions, improved efficiency, a lower threshold for care, and more equitable access. Additionally, an important finding was the concern that many of these potential benefits would be lost if the time is not taken to implement telemedicine consultations effectively.

A lack of face-to-face and physical interaction was the most prevalent barrier to telemedicine consultations in PC. Another important barrier was the impersonality of telemedicine consultations and was greatly linked to the previous barrier. Other barriers identified were difficulties with communication, technological concerns, confidentiality concerns, concerns of being overlooked, and uncertainty of consultation timings. Further development of each sub-theme led to potential ways to address each barrier.

The main beneficial prerequisite identified was having continuity of care for telemedicine consultations. This relates to patients having a pre-existing relationship with the HCP and can be used to overcome several of the previously identified barriers. The two other beneficial prerequisites were providing support and having a clear process.

Although it was thought the COVID-19 pandemic may have lessened the severity of patient concerns of telemedicine, there was no observed difference in the pattern of how the two studies,[35,64] conducted around the COVID-19 pandemic contributed to benefits versus barrier compared to the other studies.[59]

Comparisons with Previous Literature

No previous reviews have been conducted on patient perceptions and experiences of telemedicine consultations in PC using qualitative research. Despite this, some comparisons can be made between this review's findings and previous literature. Several sub-themes such as improved access, convenience, and patient concerns about a lack of face-to-face interaction, are also very prevalent in previous literature.[10,28,37–42,46] However, these sub-themes are only mentioned rather than explored, an example of this is how one study reported only factor frequency, presenting findings such as 9% of articles stated ease of use as a benefit, without any further analysis.[10,28,42,46] Therefore, it is difficult to make any detailed comparisons. On the other hand, some sub-themes identified that are not as well acknowledged in previous literature were continuity of care, improved care for minor conditions, and patient concerns of being overlooked. Although not as well acknowledged, these factors were identified as very important aspects such as continuity of care being found to address many of the barriers identified.[35,36,67]

Implications for Practice

Considering sub-themes alongside their prevalence in included studies and the strength of evidence, four main recommendations for practice can be made:

- *PC services should utilise continuity of care for telemedicine consultations* – Telemedicine consultations should be conducted by HCPs with a pre-existing relationship with the patient to help reduce patient concerns for several identified barriers including the lack of face-to-face interaction, impersonality of consultations, and difficulties with communication.
- *PC services should provide both telephone and video consultations rather than having only one available* – Video consultations help to address patient worries about the lack of face-to-face interaction,

whereas phone consultations provide a lower digital literacy form of telemedicine consultations which helps to overcome potential technological concerns.

- *PC services should have telemedicine support available for patients* – This is to further address technological concerns and prevent patients from becoming excluded.
- *When conducting telemedicine consultations, PC HCPs should make a conscious effort to show more of an understanding of the patient's health issues whilst giving clear reasons as to why a face-to-face consultation may not be required* – If this is not done, patients feel dismissed and unsatisfied with telemedicine consultations.

Implications for Future Research

Although the review does not provide a comprehensive report of patient perceptions and experiences of telemedicine care in PC due to the review's limitations, it demonstrates important findings that are relevant to practice can be generated by studying this topic. Therefore, further research into patient perceptions and experience of telemedicine care in PC using qualitative research is not only required but should be seen as a continuous process.[28,29] The specific areas of focus for future research should include what are the benefits of telemedicine consultations that need to be protected, barriers that need to be addressed, and are patient perceptions changing over time.

Limitations of the Review

A major limitation of this review was it being conducted by a single reviewer which affects all stages of the review, reducing the reliability whilst potentially introducing bias.[51,68] Limited resources due to this review being for a postgraduate master's dissertation contributed to further limitations. One of these limitations was that potential improvements to the search strategy that were identified such as grey literature searching, hand-searching, and contacting experts were not conducted.[51,69,70] Another limitation caused by the limited resources was the exclusion of non-English studies. In addition, not every sub-theme that was preliminarily identified in the initial stages of coding could be developed and explored, meaning a few minor sub-themes are not included in this review.

Conclusion

The review explored patient perceptions and experiences of telemedicine consultations in PC using qualitative research. Three themes were identified which were potential benefits, potential barriers, and beneficial prerequisites for telemedicine consultations in primary care. Within these themes, sixteen sub-themes were identified with examples including accessibility and convenience for potential benefits, lack of face-to-face interaction and impersonal consultations for potential barriers, and continuity of care for beneficial prerequisites. Analysing these subthemes, four main recommendations for practice can be made which are to utilise continuity of care, offer both video and telephone consultations, provide adequate support, and that HCPs should demonstrate an explicit understanding of the patient's health issues.

SUMMARY - ACCELERATING TRANSLATION

Title: Exploring Adults Patients' Perceptions and Experiences of Telemedicine Consultations in Primary Care: A Qualitative Systematic Review

Telemedicine is a general term covering various forms of healthcare that are delivered remotely via telecommunication. Despite the use of telemedicine gradually increasing over recent years with benefits shown in a vast range of areas, overall uptake remained low. However, during the COVID-19 outbreak, face-to-face interaction had to be minimized, transforming this gradual uptake into sudden worldwide implementation of telemedicine consultations. Primary care is a particular area affected and one where telemedicine consultations are expected to be the future. Nonetheless, to effectively implement telemedicine into primary care in the long term, it is vital that patient perceptions and experiences are understood and explored.

Patient perceptions of telemedicine are typically assessed using quantitative measures even though patient perceptions and experiences are complex and beyond any survey or predefined criteria. Furthermore, they are often only assessed as a secondary consideration resulting in findings which are superficial. These issues highlighted a gap in the literature for a review which assess exclusively patient perceptions and experiences of telemedicine consultations in primary care whilst using qualitative research to explore perceptions in a greater depth.

The aim of this systematic review is to explore the perceptions and experiences of adults who have used telemedicine consultations in a primary care setting using qualitative research.

Studies were identified through a search of four electronic databases (MEDLINE, EMBASE, CINAHL, and CENTRAL) alongside reference list and citation searches. Quality assessment for included studies was conducted using the CASP checklist which assess the studies according to the validity of results, what are the results, and how will the results help locally. Data was synthesized using a simplified approach to thematic analysis which consisted of summarising article content with the use of tables, identifying themes, then developing, naming, comparing, and scrutinising these themes.

From 2492 identified records, ten studies met the eligibility criteria all of which were judged as either good or moderate quality. Three themes were identified which were potential benefits, potential barriers, and beneficial prerequisites for telemedicine consultations in primary care. Within these themes sixteen subthemes were identified with many interlinked. Six potential benefits of telemedicine were explored with the two most prevalent benefits being improved accessibility and convenience. Other potential benefits included improved care for minor conditions, improved efficiency, a lower threshold for care, and more equitable access. A lack of face-to-face and physical interaction was the most prevalent barrier to telemedicine consultations in primary care with the other potential barriers being impersonality of telemedicine consultations, difficulties with communication, technological concerns, confidentiality concerns, concerns of being overlooked, and uncertainty of consultation timings. The main beneficial prerequisite identified was having continuity of care for telemedicine consultations. This relates to patients having a pre-existing relationship with the healthcare professional and can be used to overcome several of the previously identified barriers. The two other beneficial prerequisites were providing support and having a clear process.

Analysing these subthemes, four main recommendations for practice can be made which are to utilise continuity of care, offer both video and telephone consultations, provide adequate support, and that healthcare professionals should demonstrate an explicit understanding of the patient's health issues.

In conclusion, exploring patient perceptions and experiences of telemedicine consultations in primary care led to the identification of key benefits of telemedicine consultations that need to be promoted and protected, barriers that should be addressed for successful long-term implementation, and beneficial prerequisites for a better patient experience. All these aspects combine to produce valuable recommendations for practice with further research needed to explore and expand on this topic area to ensure continuous improvement.

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FIGURES AND TABLES.

Figure 1: PRISMA Flowchart.

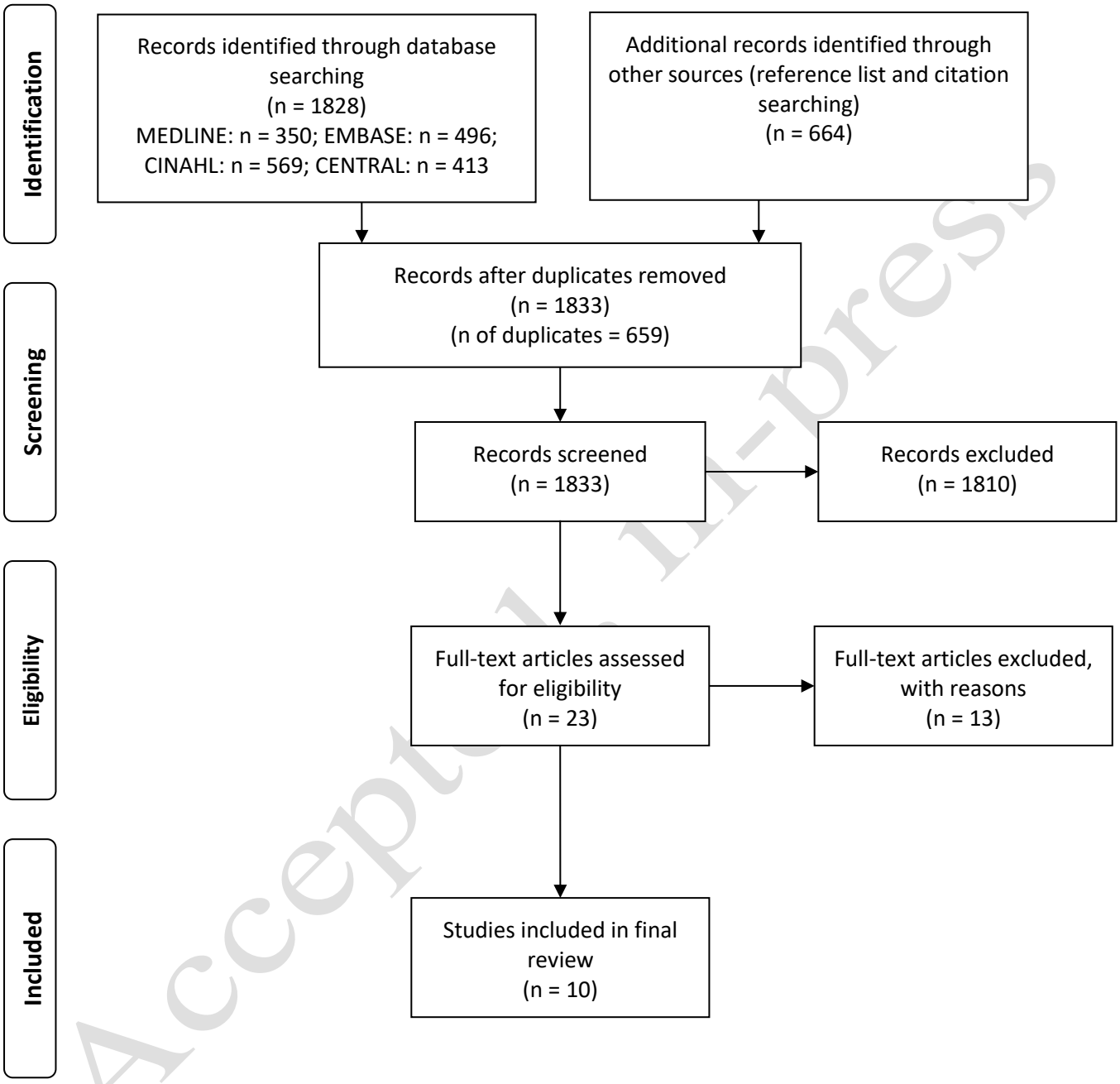

Table 1: Characteristics of Participants for Included Studies.

Study	Sample size	Description of participants	Age	Gender (% female)
Ball et al., 2018[58]	43	Patients who had been using the 'telephone-first' approach for between 18 months and five years	Range: 28-86 Mean: Not calculable	69.8%
Bleyel et al., 2020[34]	13	Patients from primary care practices and a tertiary care hospital	Range: 21-77 Mean: 48.7	62%
Eccles et al., 2019[63]	569*	Patients who were users of an online triage platform	Range: 0-91* Mean: 44.2*	62%*
Gabrielsson-Järhult et al., 2021[59]	26*	Users of telemedicine consultations from a national sample	Range: 18-73* Mean: 43*	62%*
Holmström et al., 2016[60]	10	Older persons in Sweden	Range: 68-95 Mean: 79	60%
Imlach et al., 2020[35]	38*	Adults (> 18 years) who had contact with practices during lockdown	Range and mean not reported	63%*
Javanparast et al., 2021[64]	30	Patients from nine general practices in metropolitan Adelaide	Range: 54-88 Mean: Not calculable	57%
Lindberg et al., 2021[61]	19	Older persons living in the sparsely populated northern interior of Sweden who were using digital services at two primary health care centres	Range: 61-85 Mean: Not calculable	63%
Nymberg et al., 2019[62]	15	Elderly patients from three primary health care centres in Southern Sweden	Range: 65-80 Mean: 73	53%
Powell et al., 2017[36]	19	Patients who are 18 years old or older who had a video visit with their established primary care clinicians	Range: 23-94 Mean: 43	47%
*These values are only for the qualitative aspect of a mixed-method study				

Table 2: Characteristics of Included Studies.

Study	Year	Country	Form of Telemedicine Assessed	Study design	Data Collection Methods	Data Analysis Methods
Ball et al., 2018[58]	2018	England	'Telephone-first' approach	Qualitative	Semi-structured interviews	Thematic analysis
Bleyel et al., 2020[34]	2020	Germany	Mental health video consultations	Qualitative	Semi-structured interviews	Thematic analysis
Eccles et al., 2019[63]	2019	UK	Online triage	Mixed-method	Online survey*	Thematic analysis*
Gabrielsson-Järhult et al., 2021[59]	2021	Sweden	Consultations via video or chat in a digital platform	Mixed-method	Semi-structured interviews (telephone)*	Thematic analysis*
Holmström et al., 2016[60]	2016	Sweden	Telephone advice nursing service	Qualitative	Semi-structured interviews	Qualitative content analysis
Imlach et al., 2020[35]	2020	New Zealand	Telephone and video consultations	Mixed-method	Semi-structured interviews*	Thematic analysis*
Javanparast et al., 2021[64]	2021	Australia	Telemedicine consultations (telephone or video) and self-monitoring	Qualitative	Semi-structured interviews (telephone)	Thematic analysis
Lindberg et al., 2021[61]	2021	Sweden	Virtual Health Room, remote patient monitoring, and Virtual Acute Cart	Qualitative	Semi-structured interviews	Qualitative content analysis
Nymberg et al., 2019[62]	2019	Sweden	No specific type was assessed (e-health generally)	Qualitative	Semi-structured focus group interviews	Thematic content analysis
Powell et al., 2017[36]	2017	United States	Video consultations	Qualitative	Semi-structured interviews	Qualitative content analysis
* This is only the qualitative data collection and analysis methods for the mixed-method studies						

1 **Table 3:** CASP Checklist Quality Assessment Results

CASP Questions	Ball et al., 2018[58]	Bleyel et al., 2020[34]	Eccles et al., 2019[63]	Gabrielsson-Järhult et al., 2021[59]	Holmström et al., 2016[60]	Imlach et al., 2020[35]	Javanparast et al., 2021[64]	Lindberg et al., 2021[61]	Nymberg et al., 2019[62]	Powell et al., 2017[36]
Was there a clear statement of the aims of the research?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Was the recruitment strategy appropriate to the aims of the research?	Y	Y	N	Y	Y	Y	Y	Y	Y	Y
Was the data collected in a way that addressed the research issue?	Y	Y	N	Y	Y	Y	Y	Y	Y	Y
Was the data analysis sufficiently rigorous?	Y	Y	Y	Y	Y	Y	?	Y	Y	Y
Is there a clear statement of findings?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Is the research valuable?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Overall Quality	Good	Good	Moderate	Good	Good	Good	Moderate	Good	Good	Good
Additional Assessment Questions included in CASP but are not part of the quality assessment criteria used in this review										
Is a qualitative methodology appropriate?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Was the research design appropriate to address the aims of the research?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Has the relationship between researcher and participants been adequately considered?	?	Y	?	?	?	?	?	?	Y	Y
Have ethical issues been taken into consideration?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Table Key: Yes = Y, No = N, Cannot tell = ?										

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APPENDIX

Appendix 1: Review Protocol

Protocol for Systematic Review: Exploring Adults' Perceptions and Experiences of Telemedicine in Primary Care

Background and Rationale

Telemedicine is an umbrella term covering various forms of healthcare which is delivered remotely using telecommunication.[1,2] Other terms such as telehealth, eHealth, and mHealth are generally used interchangeably with telemedicine in the literature.[1,3] Potential advantages of telemedicine are well discussed throughout the literature, such as increasing the assess and reach of healthcare, improving convenience, and reducing cost.[4,5] With these factors around telemedicine becoming more established, questions are moving beyond the clinical and cost-effectiveness of telemedicine into other areas such as patient perceptions.[6]

Over recent years the use of telemedicine in healthcare has been gradually increasing with benefits shown in a vast range of areas including surgery, diabetes, and geriatrics.[2,4,7,8] However, during the COVID-19 outbreak face-to-face consultations had to be avoided, causing this gradual uptake to become a sudden worldwide implementation of telemedicine to help manage the pandemic.[9,10] Inadvertently, this unexpected mass implementation has showcased the advantages of embedding telemedicine into healthcare on a large scale.[9]

Primary care is a particular area in which telemedicine is expected to be widely utilised in the future, and this view was further enhanced by the substantial benefits shown during the COVID-19 pandemic.[11,12] However, in order to effectively implement telemedicine into primary care in the long-term, certain areas need to be explored further. One of the areas that will be vital to the effective implementation of telemedicine is understanding patient perceptions and experiences.[5]

Patient satisfaction acts as both an influential motivator and stressor to the development and improvement of healthcare services.[13] Additionally, active involvement and engagement of patients in healthcare has been associated with improved outcomes and patient experiences.[14,15] The importance of patient perceptions are further demonstrated by the key NHS and general healthcare principle of person-centred care, as to deliver person-centred care the patient perspective must be explored.[15]

Although there is literature on patient perceptions of telemedicine generally, there is a gap in the literature regarding a review of the patient perceptions specifically surrounding telemedicine in primary care. Various primary research has been produced on this topic generating several themes, however, this information has not yet been brought together in a review. The current literature around patient perceptions of telemedicine and primary care will be discussed further in the literature review section.

Summarising the previous points, the use of telemedicine in primary care is continuously increasing and the focus for telemedicine research is moving beyond clinical and cost-effectiveness. Furthermore, these points combined with the importance of understanding patient perceptions in healthcare, demonstrate the rationale behind a review exploring patient perception of telemedicine specifically relating to primary care.

Research Question

What are the perceptions and experiences of adult patients who have used telemedicine in primary care?

Aims and Objectives

Aim

- To explore the perceptions and experiences of adults who have used telemedicine in a primary care setting.

Objectives

1. Identify key aspects that relate to the perceptions and experiences of adults who have used telemedicine in a primary care setting
2. Generate common themes for the perceptions and experiences of adults who have used telemedicine in a primary care setting
3. Explore how the identification of these themes can be used to benefit future practice

Preliminary Literature Review

Patient satisfaction of telemedicine usually relates to quantitative measures of assessing patient perceptions of telemedicine, and there is various literature exploring this. The consensus of the literature is that patients are satisfied with telemedicine with consideration to various parameters such as access and convenience.[5,16] However, for this systematic review the focus is to explore beyond if patients are satisfied, but to try to understand the themes behind patient perceptions of telemedicine, specifically primary care.

Various telemedicine studies include aspects assessing patient perceptions, but this is often not the focus of the study and is a secondary consideration. As a result, the findings tend to be superficial, and only discuss the well documented benefits to patients rather than interviewing patients in-depth. In order to assess what literature has been published and the feasibility of a systematic review on patient perceptions of telemedicine in primary care, a scoping search was performed.

For this scoping search the CINAHL database was used, and the search terms can be seen in the appendix. After reviewing the titles and abstracts for suitable studies that focused on patient perception of telemedicine in primary care, the 748 articles were reduced to 18. Various methods were used by the studies with nine using qualitative methods,[17–25] seven using quantitative methods,[26–32] and two being mixed method studies,[33,34]. The different studies resulted in a variety of conclusions but there were some key themes that arose.

Common, well-discussed aspects of telemedicine were mentioned in numerous studies such as convenience,[21,22,24,25,32,34] saving time,[21,22,24,27,32,34] and a preference to be seen face-to-face,[24,26,34]. One theme which is not as well acknowledged currently in the literature is patient perceptions of the patient physician relationship in telemedicine. This transpersonal relationship is an important aspect to a positive experience of telemedicine for patients,[21,25,34]. It was easier if this relationship was pre-existing, but it could be developed without a prior relationship before the telemedicine consultation.[34] The relevance of this to practice is that consideration and effort needs to be made for developing this patient physician relationship in order to deliver telemedicine in an effective way, whilst enhancing the patient experience.

Another theme that arose from multiple articles was patients expressing a need for telemedicine in primary care to be tailored to the individual or group,[17,18,20,22,33]. A user-centred design approach should be taken as trying to use telemedicine without consideration to specific context would cause negative patient attitudes and experiences.[20]

Although this is only a scoping search, so no comprehensive analysis of the themes has been done, it demonstrates that addressing the gap in the current literature of a review surrounding patient perceptions of telemedicine in primary care would be of benefit, as bringing the current literature together will produce findings which can help to better understand the patient perspective. Both of the themes disused along with others such as a concern for telemedicine not being effectively integrated with other aspects of healthcare,[17,20,22,27] would be explored in further detail in the systematic review.

Methodology

Focused review question

As the focus of this review is exploring the perceptions and experiences of patients, literature using the qualitative interpretivism approach is more appropriate than the quantitative positivist approach.[35] This was confirmed by the scoping search with qualitative studies exploring this area in significantly more depth than quantitative studies. Considering this, the SPIDER acronym was used to help guide development of a focused research question as it was specifically developed for qualitative research questions.[36]

Question: What are the perceptions and experiences of adult patients who have used telemedicine in primary care?

Sample: Adult patients in primary care.

Phenomena of Interest: Use of any form of telemedicine in primary care.

Design: Non-interventional qualitative or mixed method studies of any theoretical framework.

Evaluation: Perceptions and experiences of telemedicine in primary care.

Research: Qualitative or mixed method research.

Search strategy

Search terms:

Both MeSH and free-text terms will be used alongside Boolean operators to search the electronic databases.[37] Below are the MeSH and free-text terms which will be used.

Terms	MeSH terms	Free text
Telemedicine	Telemedicine	telehealth or telemedicine or telemonitoring or telepractice or telenursing or telecare or ehealth or e-health or mobile health or mhealth or m-health
Primary care	Primary Health Care, General Practice, Family Practice	primary care or primary health* or primary healthcare* or family practi* or community care or general practi* or generalist*
Perceptions and experiences	Attitude	perception* or attitude* or opinion* or experience* or view* or reflection* or belief* or impact* or influence*

Search limits:

Study designs	Qualitative and mixed method study designs
Publication type	Peer-reviewed journal articles
Date of publication	None
Language	English

Sources to be Searched:

Multiple electronic databases will be searched including CINAHL, MEDLINE, EMBASE, and Cochrane Library. To further ensure all relevant articles are identified, both examination of reference lists and citation searching using Google scholar will be conducted.[38]

Study selection

Design of studies:

As previously mentioned, qualitative studies will be used in this systematic review and thus a qualitative systematic review methodology will be utilised.[39] Due to the scoping search demonstrating a potentially limited number of primary studies that are purely qualitative studies on the topic, suitable mixed-method studies will also be included in this systematic review.

Inclusion and exclusion criteria:

Inclusion and exclusion criteria have been created using the SPIDER acronym with the addition of language and can be seen below in the table.[36]

Selection Criteria	Inclusion	Exclusion
Sample	Adults (18 years and older) from all sexes	Children or adolescents (less than 18 years old)
Phenomenon of Interest	Use of any form of telemedicine in a primary care setting	Studies not based in primary care Studies not primarily focused on telemedicine
Design	Non-interventional qualitative or mixed method studies	Interventional studies which do not have a focus of patient perceptions and experiences
Evaluation	Perceptions or experiences of patients who have used telemedicine in primary care setting	Studies not focusing on patient perceptions or experiences Studies that only focus on physicians' perceptions and experiences
Research	Qualitative and mixed method studies	Quantitative studies
Language	English	Non-English

Selection of Studies:

Study selection will consist of two stages; initially the titles and abstracts will be screened against the inclusion criteria to identify potentially relevant studies.[40] Duplicates will be removed and in cases where information is missing the study authors will be contacted, if this is not feasible the studies will be excluded and labelled as 'potentially relevant studies'.[40] In the next step, studies that appear to meet the inclusion criteria or studies where further assessment is required, will be screened using the full papers. To document and report this process in a complete and transparent manner a PRISMA flow diagram will be used alongside a table showing the characteristics of excluded studies with reasons for exclusion.[37,41] All of this processing will be completed by one reviewer, and this is a recognised limitation of the study.

Assessment of validity, applicability and reliability

To critical appraise included studies the Critical Appraisal Skills Programme (CASP) checklist for qualitative research will be used.[37,42] The CASP checklist consists of 10 questions which aim to help systematically assess the studies according to the three broad issues of validity of results, what are the results, and how will the results help locally.[42]

Data extraction

Data will be extracted using a standardised data extraction form to provide consistency to the review whilst reducing bias, but also improving validity and reliability.[40] The standardised data extraction form will be created by adapting a pre-existing form such as one outlined by Noyes et al.,[43]. The Centre of Reviews and Dissemination (CRD) guidelines will also help in this process.[40] To ensure all relevant information will be captured, the data extraction form will be piloted on a small sample of studies and then refined accordingly.[40] The data extraction form will be electronic to allow for the combination of data extraction and data entry in the same step, whilst also facilitating the data analysis.[40] As with all other steps in this review, data extraction will be conducted by a single reviewer and where data is missing study authors will be contacted. An example of some of the data extraction fields and information that will be extracted can be seen in the appendix.

Proposed data synthesis

Data will be synthesised using a simplified approach to thematic analysis as described by Aveyard,[37]. This approach was developed by taking ideas from previous thematic analysis work in combination with feedback

and experience to refine and amend the approach technique. The stages of the simplified thematic analysis that will be used for this review consist of summarising the content of all articles with the use of tables, identifying themes, developing and naming these themes, comparing themes, and scrutinising the themes. A simplified approach to thematic analysis as outlined by Aveyard,[37] was chosen over other approaches because it was developed to be well suited for use by undergraduate and postgraduate students. This was achieved by considering aspects relevant to single student projects such as limited resources, the review being conducted by only a single reviewer, and not requiring a level of expertise which is beyond postgraduate level.[37]

Review Timetable

Below is a preliminary timetable for the review with milestones to monitor progress.

Task	Completion Date
Focus question	08/03/2021
Scoping search	08/03/2021
Draft protocol	17/03/2021
Final protocol	24/03/2021
Full search	28/06/21
Order papers	05/07/2021
Study selection	12/07/2021
Quality assessment	02/08/2021
Data extraction	02/08/2021
Data synthesis	09/08/2021
Draft review submission	25/08/2021
Final review submission	08/09/2021

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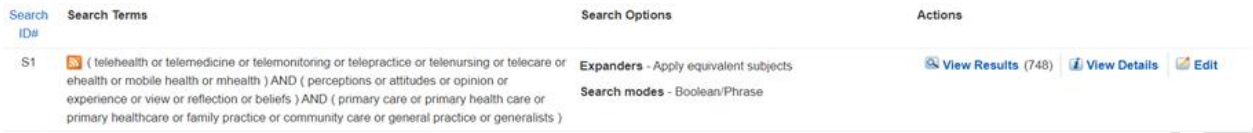
Protocol Appendix

Protocol Appendix 1: Screenshot of search terms used in the scoping search strategy



Protocol Appendix 2: Examples of data extraction fields and information to be extracted

Data extraction field	**Information extracted**
Context and participants	Research question; Aims; Date and timings; Country and area of study; Rationale; Ethical standards; Participant characteristics (age, gender, ethnicity, SES); Number of participants; Type of publication; Source of funding
Study design and methods used	Study setting; Sampling approach; Data collection methods; Data analysis approach
Findings	Key themes identified in the study; Data extracts related to the key themes; Author explanations of the key themes; Recommendations made by authors; Opinions of the author; Implications of findings for policy and practice; Generalisability of findings; Conclusions
Quality of the study	Assessment of study quality; Assessment of validly
Other	Strengths of the study; Limitations of the study

1 **Appendix 2:** PRISMA 2020 Checklist.[47]

Section and Topic	Item #	Checklist item	Location where item is reported
TITLE			
Title	1	Identify the report as a systematic review.	Pg. 1
ABSTRACT			
Abstract	2	See the PRISMA 2020 for Abstracts checklist.	Pg. 3
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of existing knowledge.	Pg. 4-5
Objectives	4	Provide an explicit statement of the objective(s) or question(s) the review addresses.	Pg. 5
METHODS			
Eligibility criteria	5	Specify the inclusion and exclusion criteria for the review and how studies were grouped for the syntheses.	Pg. 6
Information sources	6	Specify all databases, registers, websites, organisations, reference lists and other sources searched or consulted to identify studies. Specify the date when each source was last searched or consulted.	Pg. 6
Search strategy	7	Present the full search strategies for all databases, registers and websites, including any filters and limits used.	Pg. 6 Appx. 4-7
Selection process	8	Specify the methods used to decide whether a study met the inclusion criteria of the review, including how many reviewers screened each record and each report retrieved, whether they worked independently, and if applicable, details of automation tools used in the process.	Pg. 6-7
Data collection process	9	Specify the methods used to collect data from reports, including how many reviewers collected data from each report, whether they worked independently, any processes for obtaining or confirming data from study investigators, and if applicable, details of automation tools used in the process.	Pg. 7 Appx. 8
Data items	10a	List and define all outcomes for which data were sought. Specify whether all results that were compatible with each outcome domain in each study were sought (e.g. for all measures, time points, analyses), and if not, the methods used to decide which results to collect.	Pg. 7 Appx. 8
	10b	List and define all other variables for which data were sought (e.g. participant and intervention characteristics, funding sources). Describe any assumptions made about any missing or unclear information.	Appx. 8
Study risk of bias assessment	11	Specify the methods used to assess risk of bias in the included studies, including details of the tool(s) used, how many reviewers assessed each study and whether they worked independently, and if applicable, details of automation tools used in the process.	Pg. 7
Effect measures	12	Specify for each outcome the effect measure(s) (e.g. risk ratio, mean difference) used in the synthesis or presentation of results.	N/A
Synthesis methods	13a	Describe the processes used to decide which studies were eligible for each synthesis (e.g. tabulating the study intervention characteristics and comparing against the planned groups for each synthesis (item #5)).	N/A
	13b	Describe any methods required to prepare the data for presentation or synthesis, such as handling of missing summary statistics, or data conversions.	N/A
	13c	Describe any methods used to tabulate or visually display results of individual studies and syntheses.	Pg. 7
	13d	Describe any methods used to synthesize results and provide a rationale for the choice(s). If meta-analysis was performed, describe the model(s),	Pg. 7

Section and Topic	Item #	Checklist item	Location where item is reported
		method(s) to identify the presence and extent of statistical heterogeneity, and software package(s) used.	
	13e	Describe any methods used to explore possible causes of heterogeneity among study results (e.g., subgroup analysis, meta-regression).	N/A
	13f	Describe any sensitivity analyses conducted to assess robustness of the synthesized results.	N/A
Reporting bias assessment	14	Describe any methods used to assess risk of bias due to missing results in a synthesis (arising from reporting biases).	N/A
Certainty assessment	15	Describe any methods used to assess certainty (or confidence) in the body of evidence for an outcome.	N/A
RESULTS			
Study selection	16a	Describe the results of the search and selection process, from the number of records identified in the search to the number of studies included in the review, ideally using a flow diagram.	Pg. 8 Figure 1
	16b	Cite studies that might appear to meet the inclusion criteria, but which were excluded, and explain why they were excluded.	Appx. 9
Study characteristics	17	Cite each included study and present its characteristics.	Pg. 8 Table 1-2
Risk of bias in studies	18	Present assessments of risk of bias for each included study.	Pg. 8 Table 3 Appx. 10
Results of individual studies	19	For all outcomes, present, for each study: (a) summary statistics for each group (where appropriate) and (b) an effect estimate and its precision (e.g. confidence/credible interval), ideally using structured tables or plots.	N/A
Results of syntheses	20a	For each synthesis, briefly summarise the characteristics and risk of bias among contributing studies.	Pg. 8 Table 3 Appx. 10
	20b	Present results of all statistical syntheses conducted. If meta-analysis was done, present for each the summary estimate and its precision (e.g. confidence/credible interval) and measures of statistical heterogeneity. If comparing groups, describe the direction of the effect.	Pg. 8-11
	20c	Present results of all investigations of possible causes of heterogeneity among study results.	N/A
	20d	Present results of all sensitivity analyses conducted to assess the robustness of the synthesized results.	N/A
Reporting biases	21	Present assessments of risk of bias due to missing results (arising from reporting biases) for each synthesis assessed.	N/A
Certainty of evidence	22	Present assessments of certainty (or confidence) in the body of evidence for each outcome assessed.	N/A
DISCUSSION			
Discussion	23a	Provide a general interpretation of the results in the context of other evidence.	Pg. 12
	23b	Discuss any limitations of the evidence included in the review.	Pg. 13
	23c	Discuss any limitations of the review processes used.	Pg. 13
	23d	Discuss implications of the results for practice, policy, and future research.	Pg. 13
OTHER INFORMATION			
Registration and protocol	24a	Provide registration information for the review, including register name and registration number, or state that the review was not registered.	Pg. 3

Section and Topic	Item #	Checklist item	Location where item is reported
	24b	Indicate where the review protocol can be accessed, or state that a protocol was not prepared.	Pg. 6
	24c	Describe and explain any amendments to information provided at registration or in the protocol.	Pg. 6-7
Support	25	Describe sources of financial or non-financial support for the review, and the role of the funders or sponsors in the review.	Pg. 1
Competing interests	26	Declare any competing interests of review authors.	Pg. 1
Availability of data, code and other materials	27	Report which of the following are publicly available and where they can be found: template data collection forms; data extracted from included studies; data used for all analyses; analytic code; any other materials used in the review.	N/A

1 **Appendix 3:** ENTREQ Checklist.[48]

No	Item	Guide and description	Location
1	Aim	State the research question the synthesis addresses.	Pg. 5
2	Synthesis methodology	Identify the synthesis methodology or theoretical framework which underpins the synthesis, and describe the rationale for choice of methodology (e.g. meta-ethnography, thematic synthesis, critical interpretive synthesis, grounded theory synthesis, realist synthesis, meta-aggregation, meta-study, framework synthesis).	Pg. 7
3	Approach to searching	Indicate whether the search was pre-planned (comprehensive search strategies to seek all available studies) or iterative (to seek all available concepts until they theoretical saturation is achieved).	Pg. 6-7
4	Inclusion criteria	Specify the inclusion/exclusion criteria (e.g. in terms of population, language, year limits, type of publication, study type).	Pg. 6
5	Data sources	Describe the information sources used (e.g. electronic databases (MEDLINE, EMBASE, CINAHL, psycINFO, Econlit), grey literature databases (digital thesis, policy reports), relevant organisational websites, experts, information specialists, generic web searches (Google Scholar) hand searching, reference lists) and when the searches conducted; provide the rationale for using the data sources.	Pg. 6
6	Electronic Search strategy	Describe the literature search (e.g. provide electronic search strategies with population terms, clinical or health topic terms, experiential or social phenomena related terms, filters for qualitative research, and search limits).	Pg. 6 Appx. 4-7
7	Study screening methods	Describe the process of study screening and sifting (e.g. title, abstract and full text review, number of independent reviewers who screened studies).	Pg. 6-7
8	Study characteristics	Present the characteristics of the included studies (e.g. year of publication, country, population, number of participants, data collection, methodology, analysis, research questions).	Pg. 8 Figure 1
9	Study selection results	Identify the number of studies screened and provide reasons for study exclusion (e,g, for comprehensive searching, provide numbers of studies screened and reasons for exclusion indicated in a figure/flowchart; for iterative searching describe reasons for study exclusion and inclusion based on modifications t the research question and/or contribution to theory development).	Pg. 8 Tables 1-2
10	Rationale for appraisal	Describe the rationale and approach used to appraise the included studies or selected findings (e.g. assessment of conduct (validity and robustness), assessment of reporting (transparency), assessment of content and utility of the findings).	Pg. 7
11	Appraisal items	State the tools, frameworks and criteria used to appraise the studies or selected findings (e.g. Existing tools: CASP, QARI, COREQ, Mays and Pope [25]; reviewer developed tools; describe the domains assessed: research team, study design, data analysis and interpretations, reporting).	Pg. 7
12	Appraisal process	Indicate whether the appraisal was conducted independently by more than one reviewer and if consensus was required.	Pg. 7
13	Appraisal results	Present results of the quality assessment and indicate which articles, if any, were weighted/excluded based on the assessment and give the rationale.	Pg. 8 Table 3 Appx. 10

14	Data extraction	Indicate which sections of the primary studies were analysed and how were the data extracted from the primary studies? (e.g. all text under the headings "results /conclusions" were extracted electronically and entered into a computer software).	Pg. 7
15	Software	State the computer software used, if any.	Pg. 7
16	Number of reviewers	Identify who was involved in coding and analysis.	Pg. 7
17	Coding	Describe the process for coding of data (e.g. line by line coding to search for concepts).	Pg. 7
18	Study comparison	Describe how were comparisons made within and across studies (e.g. subsequent studies were coded into pre-existing concepts, and new concepts were created when deemed necessary).	Pg. 7
19	Derivation of themes	Explain whether the process of deriving the themes or constructs was inductive or deductive.	Pg. 7
20	Quotations	Provide quotations from the primary studies to illustrate themes/constructs, and identify whether the quotations were participant quotations of the author's interpretation.	N/A
21	Synthesis output	Present rich, compelling and useful results that go beyond a summary of the primary studies (e.g. new interpretation, models of evidence, conceptual models, analytical framework, development of a new theory or construct).	Pg. 8-11

Appendix 4: Search Strategy for MEDLINE

Search Term	Search Strategy	Results
1	exp Telemedicine/	35203
2	(telehealth or telemedicine or telemonitoring or telepractice or telenursing or telecare or ehealth or e-health or mobile health or mhealth or m-health or (digital adj2 health*)).ti,ab.	33200
3	1 or 2	50489
4	exp Primary Health Care/ or exp Family Practice/ or exp General Practice/	237882
5	(primary care or primary health* or primary healthcare* or family practi* or community care or general practi* or generalist*).mp.	299217
6	4 or 5	381964
7	((patient* or user* or client* or individual* or people* or public*) adj4 (perception* or attitude* or opinion* or experience* or view* or reflection* or belief* or impact* or influence* or expect* or perspective*)).mp.	450859
8	exp Qualitative Research/	64550
9	(qualitative research or qualitative study or qualitative methods or interview* or focus group* or survey* or ethnographic or phenomenological or case study or dialogue* or mixed method* or mixed methods design or mixed methods research).ti,ab.	1162758
10	8 or 9	1172366
11	3 and 6 and 7 and 10	350

Appendix 5: Search Strategy for EMBASE

Search Term	Search Strategy	Results
1	exp telemedicine/ or exp telehealth/	59123
2	(telehealth or telemedicine or telemonitoring or telepractice or telenursing or telecare or ehealth or e-health or mobile health or mhealth or m-health or (digital adj2 health*)).ti,ab.	42090
3	1 or 2	72570
4	exp primary medical care/ or exp general practice/ or exp primary health care/	246958
5	(primary care or primary health* or primary healthcare* or family practi* or community care or general practi* or generalist*).mp.	445436
6	4 or 5	466068
7	((patient* or user* or client* or individual* or people* or public*) adj4 (perception* or attitude* or opinion* or experience* or view* or reflection* or belief* or impact* or influence* or expect* or perspective*)).mp.	724770
8	exp qualitative research/	89493
9	(qualitative research or qualitative study or qualitative methods or interview* or focus group* or survey* or ethnographic or phenomenological or case study or dialogue* or mixed method* or mixed methods design or mixed methods research).ti,ab.	1474902
10	8 or 9	1488624
11	3 and 6 and 7 and 10	496

Appendix 6: Search Strategy for CINAHL

Search Term	Search Strategy	Results
S1	(MH "Telemedicine+") or (MH "Telehealth+")	28292
S2	TI (telehealth or telemedicine or telemonitoring or telepractice or telenursing or telecare or ehealth or e-health or mobile health or mhealth or m-health or (digital N2 health*))	14112
S3	AB (telehealth or telemedicine or telemonitoring or telepractice or telenursing or telecare or ehealth or e-health or mobile health or mhealth or m-health or (digital N2 health*))	15032
S4	S1 OR S2 OR S3	37847
S5	(MH "Primary Health Care") or (MH "Family Practice")	88592
S6	(primary care or primary health* or primary healthcare* or family practi* or community care or general practi* or generalist*)	195717
S7	S5 OR S6	195717
S8	((patient* or user* or client* or individual* or people* or public*) N4 (perception* or attitude* or opinion* or experience* or view* or reflection* or belief* or impact* or influence* or expect* or perspective*))	913309
S9	(MH "Qualitative Studies+")	157993
S10	TI (qualitative research or qualitative study or qualitative methods or interview* or focus group* or survey* or ethnographic or phenomenological or case study or dialogue* or mixed method* or mixed methods design or mixed methods research)	156503
S11	AB (qualitative research or qualitative study or qualitative methods or interview* or focus group* or survey* or ethnographic or phenomenological or case study or dialogue* or mixed method* or mixed methods design or mixed methods research)	589376
S12	S9 OR S10 OR S11	709121
S13	S4 AND S7 AND S8 AND S12	569

Appendix 7: Search Strategy for CENTRAL

Search Term	Search Strategy	Results
#1	MeSH descriptor: [Telemedicine] explode all trees	2796
#2	((telehealth or telemedicine or telemonitoring or telepractice or telenursing or telecare or ehealth or e-health or mobile health or mhealth or m-health or (digital NEAR/2 health*))):ti,ab,kw	12358
#3	#1 or #2	12719
#4	MeSH descriptor: [Primary Health Care] explode all trees	7550
#5	MeSH descriptor: [General Practice] explode all trees	2433
#6	MeSH descriptor: [Family Practice] explode all trees	1960
#7	((primary care or primary health* or primary healthcare* or family practi* or community care or general practi* or generalist*)):ti,ab,kw	181135
#8	#4 or #5 or #6 or #7	182990
#9	((patient* or user* or client* or individual* or people* or public*) NEAR/4 (perception* or attitude* or opinion* or experience* or view* or reflection* or belief* or impact* or influence* or expect* or perspective*)):ti,ab,kw	58916
#10	MeSH descriptor: [Qualitative Research] explode all trees	1138
#11	(qualitative research or qualitative study or qualitative methods or interview* or focus group* or survey* or ethnographic or phenomenological or case study or dialogue* or mixed method* or mixed methods design or mixed methods research):ti,ab,kw	180109
#12	#10 or #11	180109
#13	#3 and #8 and #9 and #12	413

Appendix 8: Data Items for Data Extraction

Data Extraction Field	Information Extracted
Study Details and Context	Title; Research question; Aims; Dates and timings; Country and area of study; Rationale; Ethical standards; Type of publication; Source of funding
Participants	Description of participants; Number of participants; Age; Gender; Other participant characteristics (e.g., ethnicity, SES)
Intervention	Type of telemedicine being studied
Study design and methods	Study setting; Sampling approach; Data collection methods; Data analysis approach
Findings	Key themes and relevant data extracts; Author explanations of the key themes; Recommendations made by authors; Opinions of the author; Implications of findings for policy and practice; Generalisability of findings; Conclusions
Other	Strengths of the study; Limitations of the study

Appendix 9: Excluded Studies

Study ID	Reason for Exclusion
Atherton et al., 2013[71]	Patient and physicians' perceptions and experiences are not reported separately. Consequently, the findings for only patients cannot be assessed and as this review is only focused on patient perceptions and experiences the study is excluded.
Bulik, 2008[72]	Patient and physicians' perceptions and experiences are not reported separately. Consequently, the findings for only patients cannot be assessed and as this review is only focused on patient perceptions and experiences the study is excluded.
Chang et al., 2017[73]	Patient and physicians' perceptions and experiences are not reported separately. Consequently, the findings for only patients cannot be assessed and as this review is only focused on patient perceptions and experiences the study is excluded.
Donaghy et al., 2019[74]	Patient and physicians' perceptions and experiences are not reported separately. Consequently, the findings for only patients cannot be assessed and as this review is only focused on patient perceptions and experiences the study is excluded.
Hiratsuka et al., 2013[75]	Patient and physicians' perceptions and experiences are not reported separately. Consequently, the findings for only patients cannot be assessed and as this review is only focused on patient perceptions and experiences the study is excluded.
Leng et al., 2016[76]	The qualitative analysis is very minimal, and no themes are developed from the qualitative part of the study. Therefore, the study is excluded as the qualitative research is minimal and the findings cannot be used in this review.
Mangin et al., 2019[77]	The qualitative analysis is very minimal and is only two sentences long. Therefore, the study is excluded as the qualitative research is minimal and there is a clear and significant imbalance in the weighting of the quantitative and qualitative parts of the study.
McKinstry et al., 2009[78]	Patient and physicians' perceptions and experiences are not reported separately. Consequently, the findings for only patients cannot be assessed and as this review is only focused on patient perceptions and experiences the study is excluded.
Peeters et al., 2016[33]	The qualitative analysis for patient perceptions and experiences is minimal and only consists of a short paragraph at the end of the results section. Therefore, the study is excluded as the qualitative research is minimal and there is a clear and significant imbalance in the weighting of the quantitative and qualitative parts of the study.
Radhakrishnan et al., 2016[79]	The study was only focused on telemonitoring and thus was excluded for the review.
Zanaboni and Fagerlund, 2020[80]	The qualitative analysis for telemedicine consultations is minimal and findings are not relevant for the review. Therefore, the study was excluded.
Potentially Relevant Studies	
Cernadas Ramos et al., 2020[81]	An English translation of the full text could not be found.
Kung et al., 2016[82]	Full text version could not be found.

Appendix 10: Detailed Quality Assessment Results

CASP Checklist Questions	Ball et al., 2018[58]	Bleyel et al., 2020[34]	Eccles et al., 2019[63]	Gabrielsson-Järhult et al., 2021[59]	Holmström et al., 2016[60]
1. Was there a clear statement of the aims of the research?					
What was the goal of the research	Yes	Yes	Yes	Yes	Yes
Why it was thought important	Yes	Yes	Yes	Yes	Yes
Its relevance	Yes	Yes	Yes	Yes	Yes
Overall (reviewer's decision)	Yes	Yes	Yes	Yes	Yes
2. Is a qualitative methodology appropriate?					
If the research seeks to interpret or illuminate the actions and/or subjective experiences of research participants	Yes	Yes	Yes	Yes	Yes
Is qualitative research the right methodology for addressing the research goal	Yes	Yes	Yes	Yes	Yes
Overall (reviewer's decision)	Yes	Yes	Yes	Yes	Yes
3. Was the research design appropriate to address the aims of the research?					
If the researcher has justified the research design	Yes	Yes	Yes	Yes	Yes
Overall (reviewer's decision)	Yes	Yes	Yes	Yes	Yes
4. Was the recruitment strategy appropriate to the aims of the research?					
If the researcher has explained how the participants were selected	Yes	Yes	Yes	Yes	Yes
If they explained why the participants they selected were the most appropriate to provide access to the type of knowledge sought by the study	Yes	Yes	No	Yes	Yes
If there are any discussions around recruitment	Yes	Yes	No	Yes	No
Overall (reviewer's decision)	Yes	Yes	No	Yes	Yes
5. Was the data collected in a way that addressed the research issue?					
If the setting for the data collection was justified	Yes	Cannot tell	Yes	Cannot tell	Yes
If it is clear how data were collected	Yes	Yes	Yes	Yes	Yes
If the researcher has justified the methods chosen	Yes	Yes	No	Yes	Yes
If the researcher has made the methods explicit	Yes	Yes	Yes	Yes	Yes
If methods were modified during the study. If so, has the researcher explained how and why	Cannot tell	Yes	Cannot tell	Cannot tell	Yes
If the form of data is clear	Yes	Yes	Yes	Yes	Yes
If the researcher has discussed saturation of data	No	Yes	No	No	No
Overall (reviewer's decision)	Yes	Yes	No	Yes	Yes
6. Has the relationship between researcher and participants been adequately considered?					
If the researcher critically examined their own role, potential bias and influence during (a) formulation of the research questions (b) data collection, including sample recruitment and choice of location	No	Yes	No	No	No
How the researcher responded to events during the study and whether they considered the implications of any changes in the research design	Cannot tell	Cannot tell	Cannot tell	Cannot tell	Cannot tell
Overall (reviewer's decision)	Cannot tell	Yes	Cannot tell	Cannot tell	Cannot tell
7. Have ethical issues been taken into consideration?					
If there are sufficient details of how the research was explained to participants for the reader to assess whether ethical standards were maintained	Yes	Yes	Yes	Yes	Yes

If the researcher has discussed issues raised by the study	No	No	No	No	No
If approval has been sought from the ethics committee	Yes	Yes	Yes	Yes	Yes
Overall (reviewer's decision)	Yes	Yes	Yes	Yes	Yes
8. Was the data analysis sufficiently rigorous?					
If there is an in-depth description of the analysis process	Yes	Yes	Yes	Yes	Yes
If thematic analysis is used. If so, is it clear how the categories/themes were derived from the data	Yes	Yes	Yes	Yes	Yes
Whether the researcher explains how the data presented were selected from the original sample to demonstrate the analysis process	No	Yes	No	No	Yes
If sufficient data are presented to support the findings	Yes	Yes	Yes	Yes	Yes
To what extent contradictory data are taken into account	Yes	Yes	Yes	Yes	Yes
Whether the researcher critically examined their own role, potential bias and influence during analysis and selection of data for presentation	No	Yes	No	No	No
Overall (reviewer's decision)	Yes	Yes	Yes	Yes	Yes
9. Is there a clear statement of findings?					
If the findings are explicit	Yes	Yes	Yes	Yes	Yes
If there is adequate discussion of the evidence both for and against the researcher's arguments	Yes	Yes	Yes	Yes	Yes
If the researcher has discussed the credibility of their findings	Yes	Yes	Yes	Yes	Yes
If the findings are discussed in relation to the original research question	Yes	Yes	Yes	Yes	Yes
Overall (reviewer's decision)	Yes	Yes	Yes	Yes	Yes
10. How valuable is the research?					
If the researcher discusses the contribution the study makes to existing knowledge or understanding	Yes	Yes	Yes	Yes	Yes
If they identify new areas where research is necessary	Yes	Yes	Yes	Yes	Yes
If the researchers have discussed whether or how the findings can be transferred to other populations or considered other ways the research may be used	Yes	Yes	Yes	Yes	Yes
Overall (reviewer's decision)	Yes	Yes	Yes	Yes	Yes
Overall Quality Score					
Overall Quality Score (reviewer's decision)	Good quality	Good quality	Moderate quality	Good quality	Good quality

CASP Checklist Questions	Imlach et al., 2020[35]	Javanparast et al., 2021[64]	Lindberg et al., 2021[61]	Nymberg et al., 2019[62]	Powell et al., 2017[36]
1. Was there a clear statement of the aims of the research?					
What was the goal of the research	Yes	Yes	Yes	Yes	Yes
Why it was thought important	Yes	Yes	Yes	Yes	Yes
Its relevance	Yes	Yes	Yes	Yes	Yes
Overall (reviewer's decision)	Yes	Yes	Yes	Yes	Yes
2. Is a qualitative methodology appropriate?					
If the research seeks to interpret or illuminate the actions and/or subjective experiences of research participants	Yes	Yes	Yes	Yes	Yes
Is qualitative research the right methodology for addressing the research goal	Yes	Yes	Yes	Yes	Yes
Overall (reviewer's decision)	Yes	Yes	Yes	Yes	Yes
3. Was the research design appropriate to address the aims of the research?					
If the researcher has justified the research design	Yes	Yes	Yes	Yes	Yes
Overall (reviewer's decision)	Yes	Yes	Yes	Yes	Yes
4. Was the recruitment strategy appropriate to the aims of the research?					
If the researcher has explained how the participants were selected	Yes	Yes	Yes	Yes	Yes
If they explained why the participants they selected were the most appropriate to provide access to the type of knowledge sought by the study	Yes	No	Yes	Yes	Yes
If there are any discussions around recruitment	Yes	No	Yes	Yes	No
Overall (reviewer's decision)	Yes	Yes	Yes	Yes	Yes
5. Was the data collected in a way that addressed the research issue?					
If the setting for the data collection was justified	Yes	Cannot tell	Yes	Yes	Cannot tell
If it is clear how data were collected	Yes	Yes	Yes	Yes	Yes
If the researcher has justified the methods chosen	Yes	Yes	Yes	Yes	Yes
If the researcher has made the methods explicit	Yes	Yes	No	Yes	Yes
If methods were modified during the study. If so, has the researcher explained how and why	Cannot tell	Cannot tell	Cannot tell	Cannot tell	Cannot tell
If the form of data is clear	Yes	Yes	Yes	Yes	Yes
If the researcher has discussed saturation of data	No	No	No	No	No
Overall (reviewer's decision)	Yes	Yes	Yes	Yes	Yes
6. Has the relationship between researcher and participants been adequately considered?					
If the researcher critically examined their own role, potential bias and influence during (a) formulation of the research questions (b) data collection, including sample recruitment and choice of location	No	No	No	Yes	Yes
How the researcher responded to events during the study and whether they considered the implications of any changes in the research design	Cannot tell	Cannot tell	Cannot tell	Cannot tell	Cannot tell
Overall (reviewer's decision)	Cannot tell	Cannot tell	Cannot tell	Yes	Yes
7. Have ethical issues been taken into consideration?					
If there are sufficient details of how the research was explained to participants for the reader to assess whether ethical standards were maintained	Yes	Yes	Yes	Yes	Yes
If the researcher has discussed issues raised by the study	No	No	No	No	No

If approval has been sought from the ethics committee	Yes	Yes	Yes	Yes	Yes
Overall (reviewer's decision)	Yes	Yes	Yes	Yes	Yes
8. Was the data analysis sufficiently rigorous?					
If there is an in-depth description of the analysis process	Yes	Yes	Yes	Yes	Yes
If thematic analysis is used. If so, is it clear how the categories/themes were derived from the data	Yes	Yes	Yes	Yes	Yes
Whether the researcher explains how the data presented were selected from the original sample to demonstrate the analysis process	No	No	No	Yes	No
If sufficient data are presented to support the findings	Yes	Yes	Yes	Yes	Yes
To what extent contradictory data are taken into account	Yes	Yes	Yes	Yes	Yes
Whether the researcher critically examined their own role, potential bias and influence during analysis and selection of data for presentation	No	No	No	Yes	No
Overall (reviewer's decision)	Yes	Cannot tell	Yes	Yes	Yes
9. Is there a clear statement of findings?					
If the findings are explicit	Yes	Yes	Yes	Yes	Yes
If there is adequate discussion of the evidence both for and against the researcher's arguments	Yes	Yes	Yes	Yes	Yes
If the researcher has discussed the credibility of their findings	Yes	No	Yes	Yes	Yes
If the findings are discussed in relation to the original research question	Yes	Yes	Yes	Yes	Yes
Overall (reviewer's decision)	Yes	Yes	Yes	Yes	Yes
10. How valuable is the research?					
If the researcher discusses the contribution the study makes to existing knowledge or understanding	Yes	Yes	Yes	Yes	Yes
If they identify new areas where research is necessary	Yes	Yes	Yes	Yes	Yes
If the researchers have discussed whether or how the findings can be transferred to other populations or considered other ways the research may be used	Yes	Yes	Yes	Yes	Yes
Overall (reviewer's decision)	Yes	Yes	Yes	Yes	Yes
Overall Quality Score					
Overall Quality Score (reviewer's decision)	Good quality	Moderate quality	Good quality	Good quality	Good quality

1

1 **Appendix 11:** Existing Themes from Included Studies

Ball et al., 2018[58]	
Impact on initial contact with the practice	
Responsiveness of the practice to patient needs	
Implications for equitable/fair access to care	
Ease and convenience of access to care	
Differences in the nature of GP consultations: efficiency, communication and social contact	
Effects on continuity of care	
Implications for patient safety	
Concerns regarding confidentiality	
The importance of understanding the purpose of the approach and how it works	
Assessing the overall acceptability of the approach	
Bleyel et al., 2020[34]	
Participants' Anticipated Benefits	Shorter Waiting Times
	Shorter Travel Distances
	Lower Threshold for Seeking Specialist Mental Health Care
	Familiar Primary Care Environment
Anticipated Barriers	Lack of Face-to-Face Contact
	Technical Challenges
	Organizational Challenges
	Stigma of Seeking Mental Health Care
Prerequisites for Interacting With Providers in Video Consultations	
Eccles et al., 2019[63]	
Nature of a remote contact	
Quality of communication	
Perceived appropriateness	
Demand and the role of online triage	
Gabrielsson-Järhult et al., 2021[59]	
Theme 1: meeting health care needs through accessibility	
Theme 2: users' competent choices	
Theme 3: users' satisfaction with telemedicine consultations	
Holmström et al., 2016[60]	
Patient-friendly aspects of the telephone advice nursing	Being the centre of attention
	Supportive communication
	Feelings of trust and confidence
Patient-unfriendly aspects of the telephone advice nursing	Access to help
	Uncertainty surrounding the technique
	Unsupportive or disconfirming communication
	Feeling forlorn and having a need for follow-up
Imlach et al., 2020[35]	
Convenience	
Need to be seen in-person	
Relationships	
Technological barriers	
Views on value	
Patient preferences	
Javanparast et al., 2021[64]	
Access to general practice services and management of health conditions	
Experience of telehealth services	
Opportunity for face-to-face consultations	
Continuation of telehealth services	
Lindberg et al., 2021[61]	
The importance of in-person caring relations	
The importance of patient–nurse caring relations	
Multi-directional caring relations in eHealth	
Nymberg et al., 2019[62]	
E-health – a solution for a non-existing problem?	Do not fix what is not broken
	Problems today that e-health might solve

	Importance of accessibility to physician regardless of contact way
Elderly's experiences of e-health	Positive experience and knowledge about digital tools
	Lack of experiences and knowledge
	Unmet expectations of e-health
	Dislike of text messages for health monitoring and life style advices
Lack of will, skills, self-trust or mistrust in the new technology	Mistrust in knowledge and know how about technology in elderly
	Too high knowledge demands on elderly
	Insecurity and fear with technology in today's system
	The ageing body as a barrier
	Lack of interest for digital tools and aversion to technology
Organizational barriers	Lack of IT competence in health care organizations
	Who is responsible when IT systems fail?
	Poor communication between health care organizations' IT systems
	Disappointment over poor IT systems
	Mistrust in e-health from health care organizations
Wanting and needing to move forward	Cannot stop development
	Curiosity and interest for digital tools and technical solutions
	Need for help and information concerning e-health
	To learn on older days
Concerns to be addressed for making e-health a good solution	Lack of triage with online booking
	Accessibility, costs, and other risks with e-health
	Lack of time for physicians despite e-health
	Insecurity with e-health in emergency situations
Potential advantages with e-health versus ordinary health care	Better access with video consultations
	Practical and safe with a comprehensive drug list in the mobile
	E-health a future way to reduce bureaucracy, demands and time
	Online booking as a complement
	Advantages of digital tools for some
Need for speed, access and correct comprehensive information	Expectations of higher accessibility with e-health
	Need for fast e-health accessibility in emergency situations
	Importance of trustworthy information online
	Expectations of lab results online
	Need for comprehensive drug list
	Need for digital consultation in certain situations
Powell et al., 2017[36]	
Technological Aspects of the Experience	
Perceptions of Video Visits	
Comparisons of Office-Based and Video Visits	
Future Use	

Appendix 12: Summary of Identified Themes and Contributing Studies

Potential Benefits of Telemedicine Consultations	
Sub-theme	*Studies*
Accessibility	Ball et al., 2018[58] Bleyel et al., 2020[34] Gabrielsson-Järhult et al., 2021[59] Holmström et al., 2016[60] Imlach et al., 2020[35] Javanparast et al., 2021[64] Lindberg et al., 2021[61] Nymberg et al., 2019[62] Powell et al., 2017[36]
Equitable/Fair access	Ball et al., 2018[58] Eccles et al., 2019[63] Powell et al., 2017[36]
Convenience	Ball et al., 2018[58] Bleyel et al., 2020[34] Eccles et al., 2019[63] Gabrielsson-Järhult et al., 2021[59] Imlach et al., 2020[35] Javanparast et al., 2021[64] Powell et al., 2017[36]
Improved efficiency	Ball et al., 2018[58] Eccles et al., 2019[63] Gabrielsson-Järhult et al., 2021[59] Imlach et al., 2020[35] Powell et al., 2017[36]
Lower threshold for seeking care	Bleyel et al., 2020[34] Eccles et al., 2019[63] Gabrielsson-Järhult et al., 2021[59] Javanparast et al., 2021[64]
Improved care for minor conditions or adjuvant to care	Gabrielsson-Järhult et al., 2021[59] Imlach et al., 2020[35] Javanparast et al., 2021[64] Lindberg et al., 2021[61] Nymberg et al., 2019[62] Powell et al., 2017[36]

Potential Barriers to Telemedicine Consultations	
Sub-theme	*Studies*
Lack of face-to-face and physical interaction	Ball et al., 2018[58] Bleyel et al., 2020[34] Eccles et al., 2019[63] Gabrielsson-Järhult et al., 2021[59] Holmström et al., 2016[60] Imlach et al., 2020[35] Javanparast et al., 2021[64] Lindberg et al., 2021[61] Powell et al., 2017[36]
Impersonal consultations	Ball et al., 2018[58] Bleyel et al., 2020[34] Gabrielsson-Järhult et al., 2021[59] Holmström et al., 2016[60] Imlach et al., 2020[35] Javanparast et al., 2021[64] Powell et al., 2017[36]
Difficulties with communication	Ball et al., 2018[58] Eccles et al., 2019[63] Gabrielsson-Järhult et al., 2021[59] Holmström et al., 2016[60] Imlach et al., 2020[35]
Technological concerns	Bleyel et al., 2020[34] Eccles et al., 2019[63] Holmström et al., 2016[60] Imlach et al., 2020[35] Nymberg et al., 2019[62] Powell et al., 2017[36]
Confidentiality/ Privacy concerns	Ball et al., 2018[58] Imlach et al., 2020[35] Powell et al., 2017[36]
Concern of being overlooked	Ball et al., 2018[58] Eccles et al., 2019[63] Gabrielsson-Järhult et al., 2021[59] Holmström et al., 2016[60]
Difficulties with the uncertainty of consultation timings	Ball et al., 2018[58] Eccles et al., 2019[63]

Beneficial Prerequisites for Telemedicine Consultations			
Sub-theme	*Studies*	*Sub-theme*	*Studies*
Continuity of care	Ball et al., 2018[58] Bleyel et al., 2020[34] Imlach et al., 2020[35] Javanparast et al., 2021[64] Lindberg et al., 2021[61] Powell et al., 2017[36]	Provide support	Imlach et al., 2020[35] Lindberg et al., 2021[61] Nymberg et al., 2019[62]
		Clear process	Ball et al., 2018[58] Nymberg et al., 2019[62]