

Systematic review

What is the patient acceptability of real time 1:1 videoconferencing in an orthopaedics setting? A systematic review



Anthony W. Gilbert^{a,*}, Anju Jaggi^a, Carl R. May^b

^a Therapies Department, Royal National Orthopaedic Hospital, Stanmore HA7 4LP, UK

^b Faculty of Health Sciences, University of Southampton, Southampton SO17 1BJ, UK

Abstract

Background Real time 1:1 videoconferencing (VC) has the potential to play an important role in the management of orthopaedic pathologies. Despite positive reporting of telemedicine studies uptake in clinical practice remains low. Acceptability to patients is an important element of system take-up in telemedicine and a focus towards qualitative methodology may explore the underlying reasons behind its acceptability. In this paper we have systematically reviewed qualitative studies that include evidence about patient responses to VC services in an orthopaedic setting.

Objectives To determine whether real time 1:1 videoconferencing is acceptable to patients in an orthopaedic setting.

Data sources MEDLINE, AMED, PsychINFO, CINAHL, SCOPUS, Cochrane Database, Evidence Search and Open Grey were searched with forwards and backwards reference screening of eligible papers.

Eligibility criteria Qualitative studies exploring the acceptability of VC in an orthopaedic setting were included.

Study appraisal and synthesis methods Studies were appraised using the CASP tool. A Directed Content Framework Analysis was conducted using Normalisation Process Theory.

Results Four studies were included for review. The themes for the four studies did not overlap and did not report clinician acceptability of VC. The Directed Content Analysis of these papers using Normalisation Process Theory highlighted factors which contribute towards its acceptability.

Conclusions All studies concluded that the use of VC was acceptable. Further qualitative research exploring both patient and clinician acceptability is required utilising a theoretical framework to allow for repeatability and generalisability.

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Introduction

The demand for orthopaedic physical therapy services continues to increase in part because of the ageing population. Digital technologies, such as real time 1:1 videoconferencing, have the potential to play an important part in the management of patients with long term conditions, with large scale studies such as Virtual Outreach [1] and the Whole Systems

Demonstrator [2] demonstrating VC to be safe and effective at delivering healthcare when compared to normal face to face practice. A snapshot review of the literature on the clinical use of Skype [3], a free to downloadable application which allows for VC, has been shown to allow good communication between individuals and health professionals in the management of long term conditions.

However, despite the positive evidence supporting the use of telemedicine, several barriers to its use remain including funding, time, infrastructure, equipment, skills and preference for a traditional approach [4]. Broens *et al.* [5] identified

* Corresponding author.

E-mail address: anthony.gilbert@moh.nhs.uk (A.W. Gilbert).

five factors leading to successful telemedicine implementation, the most important of which are the quality and the ease of the technology available and acceptability of the technology by the users. User attitudes to the technology are important, especially in the early stages when robust evidence has not yet been obtained. Systematic reviews have explored patient satisfaction studies in telemedicine but the results of these studies are not easily generalizable [6,7], and have highlighted the need for *good quality* studies exploring patient satisfaction and acceptability of telemedicine. It must be noted that these reviews were conducted in the early 2000's and there are now recent examples of studies in telemedicine [8–10] that have started to emerge using qualitative data to explore the reasons underlying user attitudes and satisfaction [11].

Understanding how new techniques for clinical practice can be effectively embedded into every day practice is a complex problem and theories exist to explain the diffusion of innovations [12] and acceptance of technology [13,14]. Normalisation Process Theory (NPT) is a theoretical model that focuses attention on the work required for a practice becoming normalised (become routinely embedded in practice [15]) whilst others do not, and assists in understanding the routine incorporation of telemedicine systems in practice. NPT has 12 components (sub constructs) which are grouped into four sub-constructs. The sub constructs are split into two groups: Emergent Expressions of Agency (the things people do to implement an intervention) and Dynamic Elements of Context (the resources agents draw on to realise the intervention). The definitions for the constructs and sub constructs are available in Table 5.

Acceptability to patients is an important element of system take-up in telemedicine. An assumed level of acceptance is given to VC by patients and clinicians who choose to use it and this paper specifically focuses on the work of using the format and the underlying reasons behind its use and acceptability.

In this paper we have systematically reviewed qualitative studies that include evidence about patient responses to telemedicine services in an orthopaedic setting. Focusing on qualitative studies enables us to explore the reasons behind acceptability for the use of telemedicine in clinical practice. The studies from the review will be analysed using Directed Content Analysis [16] and interpreted in the light of NPT. The purpose of this review is to determine what actions patients take to implement VC and whether this use is acceptable to patients in an orthopaedic setting.

Methods

Objectives

The aim of this systematic review was to determine whether real time 1:1 videoconferencing is acceptable to patients in an orthopaedics setting.

Table 1
PICO criteria.

Population	Consultation between patient and clinician within an orthopaedic setting
Intervention	Consultation using real time 1:1 videoconferencing
Comparison	Not applicable—qualitative methodology
Outcomes	Patient or clinician acceptability of real time 1:1 videoconferencing

Protocol registration

A systematic review was conducted using the PRISMA approach in order to answer the research question [17]. The review protocol was registered on the PROSPERO prospective register for systematic reviews [18] (registration no CRD42015024944).

Data sources

Eight databases were searched as shown in Fig. B in supplementary material: MEDLINE, AMED, PsychINFO, CINAHL, SCOPUS, Cochrane Database, Evidence Search and Open Grey. References from studies meeting criteria for full text screen were scanned and searched in Web of Science to identify further studies meeting the inclusion criteria. The search terms included the databases' subject heading for 'real time 1:1 videoconferencing' and 'qualitative'. Searching using the term 'orthopaedics' was deemed to be too restrictive during the development of the search strategy so the clinical area was reviewed by screening the abstracts of the paper. The search terms and process can be seen in Figs. A and B (online supplementary material). The systematic search was conducted by AG and CM. A study was eligible for inclusion if it met the PICO criteria (see Table 1).

Eligibility criteria

Studies were assessed for eligibility by AG and CM. Studies were screened independently and a third reviewer was available to resolve any disagreements. Studies were eligible for selection if real time 1:1 videoconferencing was utilised between a patient and clinician within an orthopaedic setting. Studies were included if they considered patient or clinician acceptability of real time 1:1 videoconferencing. Only studies in English utilising qualitative methodology were included to enable the reviewers to explore in detail the role of the patient in the use of VC and when used, what contributed towards the perceived acceptability of VC.

The title and abstract were assessed to determine if it fulfilled the inclusion criteria. Studies which met the inclusion criteria were included for full text review. The references of included studies and articles citing the included studies were included for review against the eligibility criteria. A Directed Content Analysis [18] was undertaken on the Results and Discussion sections of each paper. The analysis focussed

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