Patients’ and providers’ experiences with video consultations used in the treatment of older patients with unipolar depression

A systematic review

Christensen, Lone Fisker; Møller, Anne Marie; Hansen, Jens Peter; Nielsen, Connie Thurøe; Gildberg, Frederik

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Patients’ and providers’ experiences with video consultations used in the treatment of older patients with unipolar depression: a systematic review

Authors: Lone Fisker Christensen 2,4,5, Anne Marie Møller 3,4, Jens Peter Hansen 1,5, Connie Thuroe Nielsen 2,6, Frederik Alkier Gildberg 1.

1. Center for Psychiatric Nursing and Health Research, Department of Regional Health Research, Faculty of Health Sciences, University of Southern Denmark
2. Department of Regional Health Research, Faculty of Health Sciences, University of Southern Denmark
3. Health Promotion Research, Department of Public Health, University of Southern Denmark
4. Research Unit for Telepsychiatry and E-mental Health, University of Southern Denmark
5. Research Unit, Department of Mental Health, Esbjerg, Region of Southern Denmark
6. Department of Mental Health, Vejle, Region of Southern Denmark

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Running title

Video consultations in older patients with depression

Author for correspondence

Lone Fisker Christensen, PhD Student, MA, RN. Department of Regional Health Research, Faculty of Health Sciences, University of Southern Denmark. Research Unit, Department of Mental Health, Esbjerg, Region of Southern Denmark, Gl. Vardevej 101, 6715 Esbjerg, Denmark.

Email: lone.fisker@rsyd.dk, Phone: + 45 24925006

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Accessible Summary

What is known on the subject?

- Depression is the most common cause of mental illness amongst older people. As a result of the growth of the older population, it is expected that an increasing number of older people will need treatment. Depression can be effectively treated – but fewer than half of those who are affected receive treatment.
- Barriers to receiving treatment are lack of resources and trained healthcare providers, social stigma, incorrect diagnoses, and long distances to treatment facilities. There is an increased need for alternative ways of treating patients with depression. The use of video consultations has shown to be a viable option for delivering mental health care to older patients. Use of video consultations allows patients to receive treatment in their own homes. None of the existing reviews have focused on satisfaction with the use of video consultations among older people with depression. This article provides knowledge regarding the use of video consultations, especially for older people with depression.

What this paper adds to existing knowledge?

- No previous review has sought to understand the use of video consultations in mental health care to older patients with depression. The results show that video consultations support mental health practice, especially as a useful alternative when face-to-face therapy is not possible. An initial skepticism from participants quickly disappeared when video consultations were experienced in action. The challenges
associated with the use of video consultations seem to consist of technical problems and lack of support from staff.

What are the implications for practice?

- Mental health practitioners should consider the use of video consultations because it can support mental health practice, especially as a useful alternative when face-to-face therapy is not possible.

Abstract

Introduction: Depression is the leading cause of mental illness among an aging population and fewer than half of those who are affected receive treatment. There is an increased need for alternative ways of treating patients; the use of video consultations has been shown to be a viable option for delivering mental health care. However, none of the existing reviews have focused on satisfaction with the use of video consultations amongst older people with depression and providers. Aim: To conduct a systematic review of the existing literature focusing on patients’ and providers’ experiences of video consultations for depression. Method: Eight scientific databases were searched. In all, 3537 articles were identified and, of these, 21 peer-reviewed articles were included in this review. Results: The results show that video consultations support mental health practice, especially as a useful alternative when face-to-face therapy is not possible. Any initial skepticism quickly disappeared when video consultations were experienced in action. The challenges seem to consist of technical problems and lack of support from staff. Discussion: The experiences and satisfaction of older people with depression seem to be positive, although methodological limitations and deficiencies of the reviewed articles should be considered. More qualitative research is needed, and future studies should focus on specific diagnoses and providers’ experiences. Implications for practice: Video consultations support mental health practice, especially as a useful alternative when face-to-face therapy is not possible.

Relevance statement

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Depression is predicted to become the leading cause of disease burden among a rapidly aging population, yet fewer than half of those who are affected receive treatment. There is an increased need for alternative ways of treating patients with depression. The use of video consultations has shown to be a viable option for delivering mental health care for older people. This article provides knowledge regarding the use of video consultations in clinical practice tailored to older people with depression and is relevant to mental health nursing.

**Keywords**

Communication, depression, e-health, older adult psychiatry

**Introduction**

More than 300 million people suffer from depression, and the number is increasing in all age groups (Ferrari et al., 2013; Kessler, 2007; Wittchen et al., 2011). Moderate depression has a prevalence of 8% to 16% in people over 60 years of age (Taylor, 2014). The world population is aging at a rate unprecedented in demographic history. Depression is predicted to become the leading cause of mental illness among older people by the year 2020, at which time one in five will be aged over 60 (Bridle, Spanjers, Patel, Atherton, & Lamb, 2012). This mental illness is associated with increased morbidity, premature mortality, greater healthcare utilization and increases in health costs (Baldwin et al., 2003; Bridle et al., 2012), and is the leading cause of suicide in older adults (Harris, 2007). Depression can be effectively treated, but fewer than half of those who are affected receive such treatment (Drozd et al., 2016).

Barriers to receiving treatment are lack of resources and trained healthcare providers, social stigma, inaccurate assessment, incorrect diagnoses and long distances to treatment facilities (Barney, Griffiths, Jorm, & Christensen, 2006; Drozd et al., 2016; Titov, 2011).

Telepsychiatry has been explored as an alternative to the traditional modes and can be broadly defined as mental healthcare at a distance (Chakrabarti, 2015; Wootton, Craig, & Patterson, 2006). In this review, telepsychiatry is defined as the provision of mental health services via video consultation technology (Hubley, Lynch, Schneck, Thomas, & Shore, 2016a). Research has demonstrated that moving treatment and care delivery into patients’
homes by using video consultations (VCs) is a viable option for delivering mental healthcare to patients with limited access to treatment (J. H. Shore, 2013; Valdagno, Goracci, di Volo, & Fagiolini, 2014). VCs resulted in clinical outcomes similar to those obtained with face-to-face treatment (FTFT) (Garcia-Lizana & Munoz-Mayorga, 2010; García-Lizana & Muñoz-Mayorga, 2010; Hubley et al., 2016a). Evidence is inconclusive but existing research suggests that use of VCs might be cost-effective (Hubley et al., 2016a; Richardson, Reid, & Dziurawiec, 2015).

A rapidly aging population with depression will constitute a social challenge in the future. Older patients can benefit from using VCs because they often have multiple, chronic conditions that limit their access to high-quality, specialized care and many of them live in rural and remote locations (Chakrabarti, 2015). The question is whether the use of VCs can remedy one or more of these barriers to treatment. Although older people, in general, do not easily embrace change and tend to be less comfortable with technology than younger people, recent studies have identified a generational acceptance of technology and eHealth (Kruse et al., 2017; Whitten & Love, 2005). To identify possibilities and limitations in the future use and implementation of VCs, the experiences of patients and providers will be an important factor. Existing literature reviews have focused on VCs used by a wide age range of psychiatric patients diagnosed with various psychiatric disorders and treated within different domains of telemedicine (Chakrabarti, 2015; Garcia-Lizana & Munoz-Mayorga, 2010; Hubley et al., 2016a). However, none of the existing reviews has focused on satisfaction with the use of VCs amongst older people with depression and providers. Therefore, the aim of this review was to conduct a systematic review of the existing research literature, focusing on patients’ and providers’ experiences of VCs used in the treatment of patients 60 + years with unipolar depression.

Method

Search strategy

The review was conducted in the databases PubMed, Academic Search Premiere, Cinahl, Scopus, PsycINFO, Web of Science, Sociological Abstracts and Embase. Because equipment for private video communication was not in use before the year 2000 (Hallock, 2004), articles searched were published between January 2000 and December 2017. The search strategy consisted of two focus areas: the first referred to videoconference technology (focus 1) and the latter to mental health (focus 2). The search strategy was customized for each database,
and different synonyms for both were found and tested in the respective databases. The full literature matrix can be seen in Appendix 1.

**Inclusion and exclusion criteria**

To meet the inclusion criteria, articles had to:

- Be published in a peer-reviewed journal
- Be written in English, German, Danish, Norwegian or Swedish
- Focus on videoconferencing by an outpatient tele-mental health service
- Include people with unipolar depression aged 60+ years
- State an aim, method, results and a conclusion
- Have an outcome that included one of the following: satisfaction, usability or acceptability

Studies using descriptive methods tend to have more positive outcomes than studies using qualitative methods (Hubley et al., 2016a). Therefore, studies using qualitative, quantitative or combined quantitative/qualitative methods were all included, to capture the complex and nuanced picture of experiences. The combination of methods provided the opportunity to create a more comprehensive and detailed description of what had been achieved and the reasons why the results had been reached (Creswell & Clark, 2017; Greene, 2007).

Articles were excluded that:

- Only focused on non-video telephone intervention
- Focused on self-administered interventions
- Focused on video communication between providers

In addition, the reference lists of the included articles were reviewed for additional articles.

**Search method and critical appraisal**

Relevant keywords and keyword synonyms for each focus area were selected based on the aim of the current review. In the databases, the synonyms for keywords and free texts in each focus area were combined with OR, and the two focus areas were then combined with AND. The search was performed on title and abstract. The two first authors screened all titles and abstracts and thereafter the full text of selected articles based on the inclusion criteria. The
included articles were critically appraised by the two first authors using The Critical Appraisal Program (CASP) (CASP, 2017). The results are categorized and presented in a quantitative and a qualitative method section in this article. Because the quality of the articles was not good enough – as judged by the CASP criteria – we did not conduct a meta-analysis. The quantitative data included gender, age, diagnosis, satisfaction, usability and acceptability. Thematic analysis, as described by Braun and Clarke (Braun & Clarke, 2006), was conducted to identify prominent themes in the qualitative studies. This method was chosen because it can be used within different theoretical frameworks. The method searches for certain themes across an entire data set, in order to find repeated patterns of meaning. A theme must capture something important in relation to the overall research question. An inductive approach was used, because themes were identified at a semantic level and were strongly linked to data themselves (Braun & Clarke, 2006). The qualitative findings were registered in an Excel spreadsheet for coding the data.

Results

From all the databases, 10,152 articles were identified, 3,537 of which were duplicates (Fig. 1). No additional articles were found in the review of included articles. After screening of titles and abstracts, 84 articles remained for full text assessment. After reading the full texts, 63 articles were excluded, 33 due to no age range given or no older people included, 11 due to unclear diagnoses, nine due to the fact that only providers were involved or no diagnosis included, three due to depression not being included and seven due to outcomes not relevant for this review. Twenty-one articles remained to be included in the final analysis.

Figure 1 PRISMA flow diagram for systematic retrieval process of articles

Insert Figure 1

The included articles are based on different types of interventions and VCs used as a supplement in different contexts and settings. The quantitative studies are shown in Table 1 and the qualitative studies in Table 2. Patients who completed the study are given in parentheses in Table 1. Seven studies were randomized controlled trials (RCTs) (Bishop, O'Reilly, Maddox, & Hutchinson, 2002; N. G. Choi et al., 2014; Egede et al., 2016; Fortney et al., 2007; Hilty, Marks, Wegelin, Callahan, & Nesbitt, 2007; Luxton et al., 2016; O'Reilly et al., 2007), six simple survey instruments (Crowe, Jani, Jani, Jani, & Jani, 2016; De Las Cuevas, Artiles, De La Fuente, & Serrano, 2003; Kobak, Williams, Jeglic, Salvucci, & Sharp,
2008; Menon et al., 2001; J. Simpson, Doze, Uarness, Hailey, & Jacobs, 2001; Yeung et al., 2009) and three were study questionnaires to which comments could be added (Greenwood, Chamberlain, & Parker, 2004; Jang et al., 2014; P. Shore, Goranson, Ward, & Lu, 2014). One article was based on a combination of a quantitative study and a qualitative study. In said article, focus group interviews added useful information about challenges and potential barriers to utilizing the program (Conn, Madan, Lam, Patterson, & Skirten, 2013). Four articles (Arnaert, Klooster, & Chow, 2007; Choi, Wilson, Sirrianni, Marinucci, & Hegel, 2014; Frank et al., 2017; Tang, Chiu, Woo, Hjelm, & Hui, 2001) were based on qualitative data. Of the 21 total included articles, 11 included a range of diagnoses and 10 focused only on depression. Eleven articles (Arnaert et al., 2007; N. G. Choi et al., 2014; Namkee G. Choi et al., 2014; Conn et al., 2013; Egede et al., 2016; Fortney et al., 2007; Frank et al., 2017; Jang et al., 2014; Menon et al., 2001; Tang et al., 2001; Yeung et al., 2009) concerned only older or mostly older adults and 10 articles included a wide range of ages. Twelve of the trials were from the United States, five from Canada, and one each from Spain, Australia, Hong Kong and Germany. Experiences of and assessments from professionals were evaluated in only five studies.

Table 1 Description of included quantitative studies

Insert Table 1

Table 2 Description of included qualitative studies

Insert Table 2

PST = problem-solving therapy, PT = patients, TAU = treatment as usual, MADRS = Montgomery-Asberg Depression Rating Scale, VT = video telephone, ECHO = Experience of Care and Health Outcomes, TEI = Treatment Evaluation Inventory, CBASP = cognitive behavioral analysis system of psychotherapy, BATD = behavioral activation treatment for depression.

Quantitative study findings

High levels of patient and provider satisfaction and acceptability are frequently reported, and there were no significant differences between FTFT and the use of VCs in the RCT studies. Only two studies (Bishop et al., 2002; Greenwood et al., 2004) found that results favored...
FTFT – but they were not significant. Two intervention studies found that VC groups rated the treatment higher than in-person therapy (N. G. Choi et al., 2014; Fortney et al., 2007). In comparing studies with a wide age range and studies that only focused on older patients, no overall differences in findings could be identified.

The main themes noted in free-text comments from patients (N. G. Choi et al., 2014; Greenwood et al., 2004; Jang et al., 2014; P. Shore et al., 2014) were that patients prefer VCs because of reduced travel time and waiting time, convenience and availability, and because they felt less stigmatized due to not being recognized as having a mental health disease. Technical difficulties (Conn et al., 2013; Jang et al., 2014) and lack of technological support (P. Shore et al., 2014) were mentioned in the additional comments and seemed to be a common issue with both providers and patients.

The quantitative studies used different survey instruments to assess patient satisfaction and acceptance. The Client Satisfaction Questionnaire (CSQ 8) was used in four studies (Bishop et al., 2002; Jang et al., 2014; Luxton et al., 2016; O'Reilly et al., 2007). The questionnaire consists of eight items rated on a 4-point Likert Scale. Internal consistency and construct validity have been established, and the measure is widely used in research (Luxton et al., 2016). Charleston Psychiatric Outpatient Satisfaction Scale, a 16-item measure Likert scale was used in one study (Egede et al., 2016), and preliminary support for the reliability and validity of the scale is provided (Pellegrin, Stuart, Maree, Frueh, & Ballenger, 2001). An 11-item, 7-point scale modified TEI was used in one study (N. G. Choi et al., 2014). TEI measures acceptability, suitability, effectiveness of treatment, likeability of the procedures used in the treatment and includes a measurement of willingness to apply the treatment to other customers. A modified and validated version for assessing the acceptability of treatment for geriatric depression is used in the included article (Landreville & Guérette, 1998).

According to the TEI questionnaire, it appeared that difficulty discussing problems and not finding the consultation informative were more prominent among those using VCs and that 30% did not feel comfortable in front of the camera. Nevertheless, 80% agreed that they would use VCs again. In the remaining studies, it did not appear whether the questionnaires were validated.

**Qualitative study findings**

The following themes were identified in the data through a thematic analysis:
Technical challenges, concerns and reliability were mentioned in four of five articles (Arnaert et al., 2007; Namkee G. Choi et al., 2014; Conn et al., 2013; Frank et al., 2017). In one study, it appeared that participants with technical backgrounds had more positive preconceptions than participants without experiences, and the technical barriers seemed to evoke negative and ambivalent attitudes in some of the female subjects (Arnaert et al., 2007). Another study showed that imagery was important for satisfaction (Arnaert et al., 2007). A few patients (Namkee G. Choi et al., 2014; Conn et al., 2013) would still have preferred to see their therapist in person because they did not trust the technology, and one therapist expressed some concern about uncertainty about whether there were other people present in the room (Frank et al., 2017).

Privacy was a minor theme, which was only discussed in two articles. Some patients mentioned that video contact protected their privacy (Namkee G. Choi et al., 2014), while others felt that VCs were an invasion of one’s privacy (Arnaert et al., 2007).

Availability: VCs increased access to care. They removed barriers such as not having to travel to a treatment facility (Arnaert et al., 2007; Namkee G. Choi et al., 2014; Frank et al., 2017; J. Simpson et al., 2001), and nurses saved time spent in outpatient clinics (Tang et al., 2001). Patients preferred video contact rather than waiting time (16). Some patients would not get the treatment if they had to travel far distances for a consultation (Namkee G. Choi et al., 2014; Conn et al., 2013), and VCs allowed family members to be involved in the consultation (Conn et al., 2013). Response time in providing new case evaluations and urgent assessments was considerably shorter through VCs (Tang et al., 2001).

Convenience: Patients were satisfied because it was more relaxing and convenient to stay at home (Arnaert et al., 2007; Namkee G. Choi et al., 2014). One patient mentioned as an advantage that external disturbance factors are avoided because the room is closed (Frank et al., 2017).

Patient-provider relationship: Two studies found that patients experienced video sessions as better than telephone sessions because of the similarity between a visual experience and an in-person session (Arnaert et al., 2007; Namkee G. Choi et al., 2014). The visual aspect felt more personal and was perceived as if the therapist was there in-person (Arnaert et al., 2007; Namkee G. Choi et al., 2014), and it was possible to provide the same information as in FTF (J. Simpson et al., 2001). The female patients – in contrast to the male patients – experienced that VCs did not replace FTF contact and that they were impersonal (Arnaert et
al., 2007). In one study, it was mentioned that it was important to meet the psychiatrist in-person beforehand (Arnaert et al., 2007) to develop a therapeutic relation. One therapist experienced limited communication intensity because facial mimics and movements were less clear (Frank et al., 2017).

**Expectations:** Two studies reported that patients and providers displayed initial skepticism and fear but also curiosity. However, the skepticism and fear quickly disappeared when they experienced VCs in action (Namkee G. Choi et al., 2014; Conn et al., 2013). One major barrier was reported in one study to be difficulty in obtaining a referral for VC treatment from family physicians, due to their skepticism regarding whether the patients would benefit from VC assessment (Conn et al., 2013).

**Empowerment:** Patients with no previous experience in the use of computers found it different but also exciting, and they were proud of their participation (Namkee G. Choi et al., 2014). One study reported that the use of VCs heightened the status of the local Services Mental Health Care Team (Conn et al., 2013).

**Discussion**

Most studies reported positive findings in regard to patients’ and providers’ experiences when using VCs and that use of VCs is comparable to FTFT. One would expect older people to rate use of VCs differently than the general population; however, there was no immediate difference between studies with a wide age range and studies limited to geriatric patients. Findings show some support for using VCs, even in geriatrics, especially when considering that results from two studies including older patients show that they prefer VCs rather than TAU (N. G. Choi et al., 2014; Fortney et al., 2007). VCs seemed especially useful in order to improve access to health services in remote areas and make equal access to treatment possible. When the alternative is not getting treatment due to long distances, it is essential to evaluate the results critically because it may be difficult to assess whether it is use of VCs or access to treatment which constitutes the focus of the assessments. The RCT studies took some account of this because control groups received TAU.

However, concerns about the use of VCs for older people with possible sensory impairment and unfamiliarity with and resistance to the use of telepsychiatric equipment are voiced (Chipps, Brysiewicz, & Mars, 2012; van den Berg, Schumann, Kraft, & Hoffmann, 2012) in other studies. When comparing studies in this review, technical challenges are also mentioned.
by patients and providers, especially in studies that include older patients. It seems to indicate that the problem could be overlooked when research projects are initiated and that the challenge is of a more general nature than actual resistance to the use of new technology. The rapidly expanding technology will probably lessen the disadvantages due to technical challenges (Garcia-Lizana & Munoz-Mayorga, 2010), and older people will gain more experience with using technology in the future. Only a few patients mentioned lack of confidence in technology as the reason they prefer TAU, and initial skepticism quickly disappeared when using the technology. One explanation may be that older psychiatric patients unlike somatic patients (van den Berg et al., 2012) overcome a barrier and resistance in using technology because stigmatization and long distances to treatment sites are often used as an explanation for the benefits of VCs.

Only a small proportion of the satisfaction-based studies had in fact measured preferences for either FTFT or VCs (S. Simpson, 2009). In the review (S. Simpson, 2009), Simpson finds that patients in different settings reported high satisfaction, and there were no significant differences between FTFT and the use of VCs in RCT studies; however, the results must be viewed in light of the fact that in some cases the alternatives to VCs were that patients received no psychiatric treatment. Levels of satisfaction around VCs used in psychiatry are in general comparable to those within other branches of telemedicine (Aarzoo et al., 2013). Satisfaction as an indicator can, however, be discussed because in certain circumstances patients may be satisfied with the care despite not benefiting from it (Chakrabarti, 2015). In this review, four studies (N. G. Choi et al., 2014; Egede et al., 2016; Luxton et al., 2016; O'Reilly et al., 2007) combined clinical outcome and satisfaction, and in the RCT studies presented, there was a correlation between clinical effect and satisfaction, which could indicate that the patients in VC groups also had a clinical effect.

A key element in the implementation of new technology is acceptance by the older people themselves (van den Berg et al., 2012). Chakrabarti points out, however, that provider satisfaction appears to be lower than patient satisfaction and that provider skepticism is a major factor limiting acceptance (Chakrabarti, 2015). In this review, difficulty in obtaining a referral for VC treatment from family physicians due to their skepticism seems to be a major hindrance in one study (Conn et al., 2013) and one therapist mentioned limited communication intensity (Frank et al., 2017). When the provider is mentioned as the initial gatekeeper in connection with the introduction and start of using VCs (Conn et al., 2013), it

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may indicate that the satisfaction of the staff is an equally important factor but less evaluated – including in this review.

Limitations and future research
VC provides new opportunities for the treatment and care of older patients with depression, although this review shows that there are strengths but also important methodological limitations and deficiencies to consider. First of all, a broad age range and different diagnoses in some studies make it difficult to identify the experiences related to depression in older people, and a confounding effect cannot be ruled out because of the mixed groups. According to the CASP criteria, the validity of study findings can be limited due to low sample sizes (Arnaert et al., 2007; Bishop et al., 2002; Crowe et al., 2016; De Las Cuevas et al., 2003; Frank et al., 2017; Greenwood et al., 2004; Jang et al., 2014; Kobak et al., 2008; Menon et al., 2001; P. Shore et al., 2014; Tang et al., 2001; Yeung et al., 2009), lack of power calculation in RCT studies (Bishop et al., 2002; N. G. Choi et al., 2014; Egede et al., 2016; Fortney et al., 2007; Luxton et al., 2016), and lack of explanation for data saturation in qualitative studies, as well as low response rates (Conn et al., 2013; Fortney et al., 2007; J. Simpson et al., 2001; Tang et al., 2001). When blinding is not possible in RCT studies using VCs, it may affect the therapists’ impartiality and selection bias, thereby resulting in an over-representation of patients amenable to VCs. Another limitation, for example, is that patients with cognitive and communication barriers were excluded in some studies.

There are several factors that limit generalizability. The studies were mainly conducted in the United States, and here many projects are grant funded, and some participants received free consultations which could affect their satisfaction with services (Mair & Whitten, 2000). To some extent this could bring into question the degree to which the results are transferable to other countries and cultures (Chipps et al., 2012). The studies are based on different settings, and VC did not become an ongoing mode of care, because in the studies reviewed, the patients were only seen a few times. Increased generalizability will require long-term use in order to identify the long-term effects of using VCs. Four articles in this review included both experiences and clinical outcomes. However, clinical outcomes were not a part of the purpose of this review and no studies included time to recovery and sustainability of gains. Future studies could advantageously combine clinical outcomes, experiences and sustainability of gains in the use of VCs and FTFT comparisons for increased validity.
Quantitative designs that rely solely on participant self-reporting are sufficient to demonstrate

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a minimum of standards of acceptability (Hubley et al., 2016a; Hubley, Lynch, Schneck, Thomas, & Shore, 2016b). The qualitative studies contribute to some extent to reaching a more nuanced understanding. However, the number is limited and the comments from participants were predominantly positive, but in some areas the results point to contradictory experiences. For example, some patients experienced that VC could not replace FTFT, while others experienced the opposite. The qualitative findings, in particular, indicate that patients’ needs can vary widely and that the results are not transferable to all patients.

The study has provided new information about use of VCs by older patients with depression but highlights the need for further research. More qualitative research and studies focusing on specific diagnoses and age groups as well as provider experiences are needed to reveal the underlying reasons for patient and provider satisfaction, before implementation on a large scale (Hubley et al., 2016a).

Older people’s needs can vary widely and change over time (van den Berg et al., 2012). Therefore more studies are needed that focus on individually adapted use of VC to accommodate the individual needs and resources of older patients. Such adaptation will increase the quality of the overall course of treatment. Systematic research on why patients refuse to participate in VCs is also needed to complete the research regarding the identification of possibilities and limitations for the future use of VCs.

Declaration of conflicting interests

The authors declare that there is no conflict of interest.

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Table 1 Description of included quantitative studies

<table>
<thead>
<tr>
<th>Author/year/country</th>
<th>Aim</th>
<th>Design/methods</th>
<th>Participants/diagnosis/age/place for VC</th>
<th>Results</th>
<th>Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bishop et al./2002/Canada</td>
<td>To compare satisfaction among patients randomly assigned to either FTFT or video consultation</td>
<td>RCT, questionnaire (CSQ 8)</td>
<td>N = 24 PT (17), different diagnoses (9 PT with depression), 2 patients 65+ All patients attended the department of psychiatry for both FTFT and video</td>
<td>A trend in favor of FTFT after 4 months but no significant difference</td>
<td>One psychiatrist provided treatment to both groups, lack of power calculation</td>
</tr>
<tr>
<td>Fortney et al./2007/USA</td>
<td>To evaluate a telemedicine-based collaborative care model</td>
<td>RCT, satisfaction, (questionnaire ECHO)</td>
<td>N = 395 PT (VC 146/177 TAU 189/218), depression, mean age: 59.2 (mostly older people) Received treatment via a telespsychiatrist at their primary care clinic</td>
<td>Intervention patients reported significantly higher satisfaction with treatment than patients in TAU after both 6 and 12 months</td>
<td>Lack of power calculation, low response rate, satisfaction was secondary outcome, primary care clinics were randomized and not patients</td>
</tr>
<tr>
<td>Hilty et al./2007/USA</td>
<td>To compare depression management modules with and without televideo psychiatric consultation on different outcomes</td>
<td>RCT, satisfaction, (questionnaire)</td>
<td>N=121PT (94), depression, age 18–80, mean 46, the location of the televideos are not stated</td>
<td>Satisfaction was significantly better in the group with video after 6 and 12 months, and retention was better in the video group as well; older subjects were more likely to complete the study</td>
<td>Several outcomes, high drop-out, questionnaire not validated, multiple sites, PT were paid for screening and follow-up visit</td>
</tr>
<tr>
<td>O’Reilly et al./2007/Canada</td>
<td>To compare variety of outcomes between FTFT and video consultation</td>
<td>RCT, questionnaires satisfaction (CSQ 8)</td>
<td>N = 495 PT (148/254 TAU, 138/241 VC), different diagnoses, depression 54%, age 18–65, VC 10% between 55–65, All patients attended the department of psychiatry for both FTFT and video</td>
<td>Similar levels of satisfaction after 4 months</td>
<td>Several outcomes, no diagnosis-specific intervention, high non-completion rate</td>
</tr>
<tr>
<td>Conn et al./2013/Canada</td>
<td>To evaluate a telepsychiatry service that linked</td>
<td>Survey: Experiences and satisfaction questionnaires and</td>
<td>N = 253 PT, physicians, different diagnoses, depression 28%, mean</td>
<td>Survey: Patients rated the program positively and were satisfied –</td>
<td>Patient response rate not available, physician survey</td>
</tr>
<tr>
<td>Study</td>
<td>Design</td>
<td>Aim</td>
<td>Participants</td>
<td>Intervention</td>
<td>Results</td>
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<tr>
<td>Choi et al./2014/USA</td>
<td>RCT, questionnaire (TEI + comments)</td>
<td>To evaluate the acceptance and efficacy of tele-PST</td>
<td>N=121 PT (107), depression, age 50–89 (mean 65.2), Patients were home-bound</td>
<td>Tele-PST groups extremely high acceptance (significantly but slightly higher than in-person) after 12 weeks of follow-up. 6.1% of all tele-PST sessions had to be switched to telephone due to bad transmissions. Initial skepticism but positive attitudes at the follow-up</td>
<td>Several outcomes, Lack of power calculation, therapist conducts both tele- and in-person sessions</td>
</tr>
<tr>
<td>Egede et al./2016/USA</td>
<td>RCT, non-inferiority trial, questionnaire (Charleston Psychiatric Outpatient Satisfaction Scale), treatment credibility, service delivery perception scores</td>
<td>To compare the impact of telepsychology and FTF care on quality of life, satisfaction, treatment credibility and service delivery perception</td>
<td>N = 241 PT (VC 83%, TAU 86%), depression, age 58+ (mean 63.9) The telemedicine group received sessions in their homes</td>
<td>No statistically significant difference in patient satisfaction</td>
<td>Lack of power calculation, these are presentations of secondary outcomes, few women</td>
</tr>
<tr>
<td>Luxton et al./2016/USA</td>
<td>RCT, non-inferiority, questionnaire CSQ 8</td>
<td>To compare the safety, feasibility and effectiveness of home-based tele-behavioral health to FTF</td>
<td>N = 121 PT (87), depression, age 19–65 (18% 50–65) The telemedicine group received sessions in their homes</td>
<td>No statistically significant difference in CSQ 8 after 8 weeks (post treatment) 35.71% of all treatment sessions over video required a phone call to resolve a technical problem</td>
<td>Satisfaction was a secondary outcome – hence no power calculation, perhaps same therapist in FTFT and video, payment for participation</td>
</tr>
<tr>
<td>Simpson et al.</td>
<td>Survey, questionnaire and</td>
<td>To evaluate the perceptions of a</td>
<td>N = 410 (379) PT, different diagnoses,</td>
<td>High satisfaction and accept around</td>
<td>Questionnaire not validated, selection</td>
</tr>
<tr>
<td>Authors</td>
<td>Country</td>
<td>Setting</td>
<td>Methodology</td>
<td>Sample Size</td>
<td>Outcome Measures</td>
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<tr>
<td>al./2001/Canada</td>
<td>Canada</td>
<td>routine telepsychiatry service</td>
<td>telephone interview</td>
<td>(31 PT)</td>
<td>28%, depression 11% age 65+. Patients receiving video from small town hospitals</td>
</tr>
<tr>
<td>Menon et al./2001/USA</td>
<td>USA</td>
<td>To determine the validity and acceptability of psychiatric assessment using video</td>
<td>Intervention study, no randomized control, questionnaire, satisfaction, comparison in-person group vs remote group</td>
<td>N = 24 PT, depression, age 60+. It is not clear where remote interviews are held but probably a GP clinic close to their homes due to last comment in the result section</td>
<td>The majority expressed satisfaction with both remote and in-person interviews. 10 out of 12 preferred the remote interview over traveling time.</td>
</tr>
<tr>
<td>De Las et al./2003/Spain</td>
<td>Spain</td>
<td>To examine acceptance of and satisfaction with routine telepsychiatry</td>
<td>Survey, questionnaire after first VC, telephone interview (to gain further assessments) after 3 months</td>
<td>N = 40 PT, (7% of VC and 14% FTF canceled), one psychiatric consultant, four GPs, 80% of eligible PT accepted participation, different diagnoses (38% depression), age 10–73 (mean 44.2)</td>
<td>PT reported high satisfaction with and acceptance of telepsychiatry post treatment and 3 months thereafter. Consultant obtained the same information by VC as in FTF, GPs satisfied but a third preferred FTF, lower canceled consultations than FTF 80% accepted telepsychiatry to waiting for FTF</td>
</tr>
<tr>
<td>Greenwood et al./2004/Australia</td>
<td>Australia</td>
<td>To evaluate a telepsychiatry clinical service</td>
<td>Intervention study (same control group), questionnaire + comments, measure: preference between video and FTF and</td>
<td>N = 31 PT (20), different diagnoses (mood disorders 80%) age 21–71 (mean 40). Patients received telepsychiatry from a satellite clinic at the rural site with a mental</td>
<td>19 patients were satisfied with the overall consultation process but only ¾ gave positive response to the telepsychiatry interview, telepsychiatry highly</td>
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<tr>
<td>Source</td>
<td>Study Design</td>
<td>Sample Size/Characteristics</td>
<td>Findings</td>
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<td>Kobak et al./2008/USA</td>
<td>Intervention study, used themselves as control, questionnaire (satisfaction)</td>
<td>N = 70 PT, two cohorts (35 in each cohort), depression/bipolar disorder mean age 44 (21-66) It is not clear whether the remote administration was given at patient’s home or a nearby clinic</td>
<td>Nearly half of the patients had no preference for FTFT or video when being interviewed. All were willing to be interviewed again using video. 68% were comfortable being interviewed over video, and 85% for FTFT. 91% felt that the interviewers were able to evaluate their symptoms and feelings over video, and 100% said the same about FTFT. 35% felt that video interfered with their ability to communicate with the interviewer</td>
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<tr>
<td>Yeung et al./2009/USA</td>
<td>Intervention study – no control, Satisfaction (questionnaire)</td>
<td>N = 9 PT (8) monolingual Chinese immigrants, nurses, family, different diagnoses (2/9 depression), age 54–88 (mean 77.3). Patients receive VC from their home – a nursing home – if needed accompanied by a nursing staff</td>
<td>Most PT/families and nurses were highly satisfied with videoconference follow-up visits and the rest were satisfied after 1–2 months</td>
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<td>Jang et al./2014/USA</td>
<td>Intervention study – no control. Questionnaire (satisfaction CSQ 8) and open-ended</td>
<td>N =14 PT (12), depression, age 65+ (68–98), mean age 80, 4. Patients received</td>
<td>Moderately high satisfaction post treatment (4 weeks counseling)</td>
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<tr>
<td>Study</td>
<td>Objective</td>
<td>Design</td>
<td>Intervention</td>
<td>Outcome Measures</td>
<td>Challenges</td>
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<tr>
<td>Shore et al./2014/USA</td>
<td>To examine feasibility and describe veterans’ perception of safety and satisfaction with home-based telemental healthcare.</td>
<td>Intervention study, no control, Telehealth based satisfaction questionnaires, free text comments</td>
<td>N = 40 PT (34), feedback from providers, different diagnoses, depression (27.5%), age 25–71. Patients used video from their homes</td>
<td>High satisfaction, reduced stigma, technical problems, convenience and outreach benefits, travel saved, low no-show rate. After fourth appointment and post treatment 0.8% no-shows</td>
<td>Outcome measures inconsistently administered by providers, heterogeneous patient group, questionnaire not validated, patients need to have internet access to a PC</td>
</tr>
<tr>
<td>Crowe et al./2016/USA</td>
<td>To compare telepsychiatry with TAU in rural deaf populations</td>
<td>Intervention study, questionnaires (satisfaction, coping abilities, acceptability, convenience)</td>
<td>N = 24 PT (15), different diagnoses, mood disorder 80%, age 23–83, patients went to mental health clinic to receive telepsychiatry. PT were from rural areas.</td>
<td>100% satisfaction in the telepsychiatry group and 81.82% in the TAU group</td>
<td>No power calculation, no method for distribution of participants in groups, small sample size, more unemployed in the TAU group, PT enrolled in program also enrolled in psychiatric rehabilitation programs</td>
</tr>
<tr>
<td>Author/Year/Country</td>
<td>Aim</td>
<td>Design/methods</td>
<td>Participants/diagnosis/age/place for VC</td>
<td>Results</td>
<td>Limitations</td>
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<tr>
<td>Tang et al./2001/ Hong Kong</td>
<td>To examine the feasibility, acceptability, costs, benefits and limitations of VC</td>
<td>Survey interview and notes, nurses asked patients whether they like telepsychiatry or not</td>
<td>N = 45 Pt, 18 nurses, 1 psychiatrist, different diagnoses (16% depression), mean age 84.1</td>
<td>VC was feasible and acceptable to the psychiatrist, staff and patients 81.6% of the patients said that they liked the telepsychiatry. The question was collected after each consultation</td>
<td>Small sample size, response rate of 55%, satisfaction based on one question</td>
</tr>
<tr>
<td>Arnaert et al./2007/ Canada</td>
<td>To explore the attitudes of older adults toward VT in their homes</td>
<td>Qualitative, semi-structured interviews (pre and post attitudes) – content analysis</td>
<td>N = 4 Pt, depression, 2 females age 63 and 80, 2 males age 67 and 63</td>
<td>The 2 males had very positive attitudes about the VT and would use it again. The two women did not want to use it again but had positive attitudes about the technology being used for others, attitudes can be a hindrance to the acceptance/use of new technology</td>
<td>Small sample size, may not be generalizable – it was a convenience sample</td>
</tr>
<tr>
<td>Conn et al./2013/ Canada</td>
<td>To evaluate a telepsychiatry service that linked a geriatric center to a rural psychogeriatric outreach service</td>
<td>Focus group interview: health care professionals and one client – content analysis</td>
<td>Different diagnoses, depression 28%, mean age 76.7 (47–96), patients received video from local clinics</td>
<td>Provider: without this service their clients would not receive the specialist consultation, initial skepticism seemed to adapt quickly, heightened status of local mental healthcare team</td>
<td>The service operates within a well-established telemedicine network. Focus group interviews were conducted over video</td>
</tr>
<tr>
<td>Choi et al./2014/ USA</td>
<td>To report older homebound adults’ experiences of telehealth PST</td>
<td>Qualitative, in-depth interviews, written feedback, focus group discussions. Thematic and content analysis</td>
<td>N = 42 Pt, study sample consisted of participants in the feasibility and efficacy trial (N. G. Choi et al., 2014), depression, 12 aging-service case managers. PT received VC from their homes</td>
<td>High level of satisfaction, approval and acceptance by PT, stating video is better than phone, CM reported low engagement rate and lack of privacy. Interviews were at 36-</td>
<td></td>
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</tbody>
</table>

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<table>
<thead>
<tr>
<th>Frank et al. 2017, Germany</th>
<th>To examine the feasibility and acceptance of CBASP by using VCs</th>
<th>Qualitative, interviews with patient and therapist, content analysis</th>
<th>N = 1 PT, depression, suicidal, one therapist, age PT 76, retired MD, 6 sessions of video with same therapist after readmission. It is not clear if the patient received video at home or from an outpatient clinic</th>
<th>VCs proved to be feasible, was accepted and considered as qualitatively equivalent to TAU</th>
<th>Case study, no data saturation, the patient was experienced with technology, generalization is limited</th>
</tr>
</thead>
</table>

via Skype

week follow-up. 10–20% who met referral criteria provided oral consent for the referral reasons for refusal
Initial identified articles \( n = 10,152 \)

Removing duplicates \( n = 3,537 \)

3,537 articles screened via titles and abstracts

Articles excluded \( n = 3,453 \)

Full text articles assessed for eligibility \( n = 84 \)

Excluded with reasons:
- No age range or no older people included \( n = 33 \)
- Diagnosis not clear \( n = 11 \)
- Only providers and no diagnosis \( n = 9 \)
- Not depression \( n = 3 \)
- Outcomes not relevant for this review \( n = 7 \)

Studies included \( n = 21 \)
## Appendix 1

### Literature matrix

#### Focus 1

<table>
<thead>
<tr>
<th>No</th>
<th>Keyword</th>
<th>Free text</th>
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</thead>
<tbody>
<tr>
<td>6</td>
<td>Teleconsultation (Embase)</td>
<td></td>
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</tbody>
</table>
| 8  | Telecommunication in psychiatry (ASP)  
Telecommunication in psychotherapy (ASP) |  |
| 9  | Teleconferencing (ASP) (Cinahl) (PsycInfo)  
Teleconference (Embase) | Teleconf* |
| 11 | Telemedicine (Cinahl) (Embase) (PsycInfo) (PubMed) | Telemedicine |
| 13 | Telepsychiatry (Cinahl) (Embase) | Telepsychiatry |
| 14 | Telepsychology |  |
| 16 | Teletherapy (Embase) | Teletherapy |
| 17 | Video chat services (internet) (ASP) | Video chat |
| 18 | Videoconferencing (ASP) (Embase) (PubMed) | Videoconf* OR video conf* |
| 19 | Video counseling OR video counselling |  |
| 21 | Web camera OR webcam* |  |

#### Focus 2

<table>
<thead>
<tr>
<th>No</th>
<th>Keyword</th>
<th>Free text</th>
</tr>
</thead>
</table>
| 1  | Behavior therapy (ASP) (Cinahl) (Embase) (PsycInfo) (PubMed)  
Cognitive behavior therapy (PsycInfo) | Behavior therapy OR behaviour therapy  
Alternative: Behavi* therapy |
| 2  | Cognitive therapy (ASP) (Cinahl) (Embase) (PsycInfo) (PubMed) | Cognitive therapy |
| 3  | Psychoanalysis (ASP) (Cinahl) (Embase) (PsycInfo) (PubMed) (Soc Ab) | Psychoanal* |
| 4  | Psychoeducation (ASP) (Cinahl) (Embase) (PsycInfo) | Psychoeducation |
| 5  | Psychotherapy (ASP) (Cinahl) (PsycInfo) (PubMed) | Psychotherap* |
| 6  | Counseling psychology (ASP) (PsycInfo) | Counseling psychology OR counselling psychology  
Alternative: Counsel* psychology |
| 7  | Mental health counseling (ASP) | Mental health counsel* |
| 8  | Mental health consultation (ASP) | Mental health consultation |
| 9  | Psychological consultation (ASP) | Psychological consultation |
| 10 | Psychiatric consultation (ASP) | Psychiatric consultation |
| 11 | Psychiatric day treatment (ASP) | Psychiatric day treatment |
|   | Psychiatric treatment (ASP) (Embase) | | |  |
|---|------------------------------------|--|---|
|   | Mental illness – treatment (ASP) | | |  |
|   | Mental health care (Embase) | | |  |
|   | Psychiatric home care (Cinahl) | | |  |
|   | Psychiatry (index terms) (ASP) (Cinahl) (Embase) (PubMed) (Soc Ab) | | |  |
|   | Community psychiatry (PsycInfo) (PubMed) | | |  |
|   | Social psychiatry (Embase) | | |  |
| 12 | Psychiatric treatment | | |  |

| 19 | Psychiatry | | |  |