REVIEW

Teleconsultation in psychology: the use of videolinks for interviewing and assessing elderly patients

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Abstract

Although elderly people are one of the major target groups for telemedicine applications, they remain under-represented in studies of teleconsultation. Videolinks appear to be easily used by many elderly people as a means of communicating with health-care staff, including psychologists and doctors. To date, studies of psychometric teleconsultation have been confined to screening tests, or have used very small numbers of patients. There is a need to examine the reliability of more complex psychometric batteries and to use larger samples of older people. Some recommendations for conducting clinical interviews and psychometric tests are presented, based on clinical experience and a review of the literature. The importance of ergonomic considerations, patient comfort and professional preparation are explained.

Keywords: teleconsultation, telemedicine, videolinks

Introduction

“A video image can be worth a thousand words” [1].

Telemedicine has been defined as a system of care that uses telecommunications and computer technology to substitute for face-to-face interaction between patients, physicians and other healthcare professionals in various combinations [2]. Teleconsulting involves the use of videoconferencing equipment installed at both the local and distant site so that the clinician and patient can see and talk to each other [3]. Integrated Services Digital Network (ISDN) technology allows voice, image, text and computer data to be transmitted from one site to another [4].

The target populations and major beneficiaries of telemedicine are those who are geographically remote and/or institutionally confined, and others who are medically underserved, including inner-city residents and elderly people [1, 2, 5]. Instead of having to travel to distant tertiary centres for routine or specialized services, people in rural areas and nursing homes can receive a potential range of health services via telemedicine technology.

Different branches of telemedicine are emerging (including teledermatology, telepsychiatry and teleradiology), and the term ‘telegerontology’ has been proposed to describe the application of telemedicine technology to elderly people [6].

Telemedicine services and the older patient

Although elderly people are potential beneficiaries of telemedicine technologies, few studies have examined their use of videolinks to access clinical specialists. Most studies have focused on telecare rather than teleconsultation. The feasibility of video-linked nursing care, post-discharge monitoring and social support for elderly people at home has been explored [7–10]. These studies indicate that elderly people adapt well to using videolinks to communicate with various health-care
professionals, although this type of technology may not be appropriate for patients with perceptual or sensory impairments. Family caregivers of patients with Alzheimer’s disease are another important target group for video-linked support systems [11].

Relatively few studies have explored the feasibility of teleconsultation with elderly subjects. Age-related disabilities and unfamiliarity with technology might cause problems [12]. A comparative study of face-to-face and video-linked consultations in orthopaedics for the after-care of fractures showed that teleconsultation was rated as acceptable by elderly patients [13], and could reduce the inconvenience and discomfort of travelling to hospital outpatient departments. Hubble et al. [1] found that patients with Parkinson’s disease had favourable opinions about this method of consultation, regarding the videolink as enabling them to gain access to better health care. Ball et al. [14] have described the experience of conducting video-linked interviews with an elderly English patient who was hospitalized in France and interviewed by a psychogeriatrician in London. The patient adapted quickly to this form of consultation, although her hearing defects affected her understanding of the psychogeriatrician’s questions.

**Psychological assessment**

Psychological assessment is an important component of patient evaluation in geriatrics. Several reports about psychiatric teleconsultations have been published which show that remote interviewing of patients is possible; however these investigations did not involve psychometric testing, and did not include older people [15–17]. One study of 11 adult psychiatric patients showed a high correlation between the results of the Mini-Mental State Examination (MMSE) when administered during face-to-face and video-linked interview settings [12].

Several studies of telephone assessment of cognitive status have been published, although the inability to score written material reduces the scope and nature of testing by telephone (for an extensive review, see Ball and McClaren [18]). For this reason, video-linked assessment should enable a broader range of test items to be presented, from more complex test batteries.

Montani et al. demonstrated the feasibility of administering cognitive screening tests to 24 elderly patients using a videolink [19, 20]. The tests used were the Clock Face Test and the MMSE; patients participated in both face-to-face and video-linked consultations, in random order, 1 week apart. The first study included 14 non-cognitively impaired elderly people [19] and a subsequent study with 10 inpatients demonstrated that remote testing was also possible with people diagnosed as having dementia [20]. Both studies used coaxial cables rather than ISDN technology to link the sites, and sound transmission problems were reported on some occasions. Mean test scores were slightly lower in the video-linked test situation, although they did not change the diagnostic category of any of the 24 patients.

Ball and Puffett [21] have reported preliminary results of cognitive testing (using the CAMCOG component of the CAMDEX) via videolink with eight elderly patients. The CAMCOG is more complex than the screening tests mentioned earlier. Test–retest correlations were high (r = 0.72 and r = 0.75), although individual subtest correlations varied from r = 0.1 to r = 0.84. The investigators encountered some unforeseen technical obstacles during their study, but they concluded that video-linked cognitive assessment was possible with elderly people.

Another study compared the scoring of the two written MMSE items (copying a design of interlocking pentagrams and writing a spontaneous phrase) [22]. A random sample of 99 patients’ written responses were scored in three ways: face-to-face, by fax and by videolink. For the video-linked ratings, each patient’s written responses were held in front of the camera and scored at the remote site. The raters reported that two of the 99 sheets were unscorable by videolink. However, this study did not involve the use of a document camera, which enables written material to be viewed more clearly at the remote site. Also, the test responses had been collected previously by a range of health-care professionals during routine face-to-face consultations, rather than in the context of teleconsultation. Some of the responses were written with light-coloured inks or on small pieces of paper, making it difficult or time-consuming to read and score.

**Rapport and therapeutic alliance**

The issues of therapeutic alliance and rapport in the video-linked consultation are important. As in the conventional consultation, both therapist and patient must feel sufficiently at ease to establish and maintain a collaborative, trusting relationship. Stamm [23] reviewed evidence from studies in mental health settings and concluded that this form of consultation has proved acceptable both to adult psychiatric patients and to clinicians. A case study involving 10 psychotherapeutic teleconsultations indicated that videoconferencing did not appear to limit the range or depth of issues discussed or the emotions of the patient [24]. Both parties felt able to establish a good working alliance, and positive therapeutic outcomes were noted by the final session.

The experience of teleconsultation is more favourably rated by patients than clinicians [15–17]. Clinicians have sometimes reported feeling distracted during consultations because of technical limitations which interfered with their ability to evaluate patient responses [16, 19]. Such negative experiences are often associated with unreliable sound or inadequate images used in pilot studies. The recent improvements in quality and design of videoconferencing equipment should
reduce the incidence of such problems. The experiences of teleconsultation with older patients outlined above indicate that elderly people also find this type of consultation acceptable. However, Montani et al. [20] have suggested that non-cognitively impaired patients were less at ease in front of the camera during initial teleconsultations than those who had cognitive impairment.

Technical and training considerations

Teleconsultation between two distant sites usually involves the use of ISDN lines. The quality of the image and sound varies, depending on the type of equipment and the bandwidth used. Previous accounts of video-linked psychiatric consultations have used various bandwidths (including 64 kbit/s [25], 128 kbit/s [12] and 384 kbit/s [26]), but there is no agreed standard for conducting teleconsultations [27] or for administering psychometric tests by videolink. We recommend using 384 kbit/s for psychological interviews and for the administration and scoring of pen and paper tests such as the Clock Face Test and MMSE. This bandwidth provides a better quality sound and allows a clearer view of nonverbal communication and facial expressions during the interview.

To date, most studies of psychological assessment with elderly people have been limited to interviews and short cognitive screening tests. They have been conducted with small samples. Comparative studies are time-consuming and costly, but the results indicate that many elderly people are willing and able to participate in teleconsultations and thereby to communicate with various types of clinicians. Further research is required to explore the feasibility of administering more complex test batteries by videolink, using larger samples and appropriate technology. During the last decade, the quality of image and sound transmission has improved; additional equipment (such as document cameras, pre-programmable remote control devices and hearing aids) is more easily available and should simplify the process of conducting interviews, assessments and follow-up consultations.

The importance of training in the use of videolinks for remote consultation is sometimes overlooked, yet it is essential that clinicians are familiar and confident with the technical aspects of the system before embarking on remote clinical interviews and evaluations. Yellowless and Kennedy [17] have described a training programme introduced to ensure that staff in a mental health service could use telemicine systems effectively and easily. This programme included information about the use of equipment, as well as training in interview techniques and communication skills. Protocols have been published for conducting telemedical consultations in accident and emergency departments [28] and for orthopaedic consultations [13].

Recommendations

Some of the most common difficulties reported using videolinks concern technical problems. Basic training is essential [17, 23, 27], so that the clinician is at ease with the use of the system. The equipment should be tested routinely before each consultation to ensure that the sound quality is adequate and the image is sufficiently clear for both parties; otherwise, it is difficult to establish and maintain a rapport, and any test results obtained may be invalid. The rooms at both sites should be free from background noise, as this is sometimes transmitted to the remote site and can be distracting.

The positioning of the patient, the furniture and test material should be planned in advance. There are some basic ergonomic considerations, such as ensuring that the patient's face is clearly visible, while avoiding glare or harsh reflections from lights or windows. If chair or table heights are adjusted between patients, the camera settings may need to be changed. We recommend that the distance between the camera and the psychologist's face does not exceed 1.2 m. This ensures that the clinician's face is clearly framed on the monitor, which helps patients to concentrate. The teleconsultant's room or desk should be free of clutter which might distract the patient, and a neutral background is desirable for displaying items for the object-naming parts of the test: a plain blue matt background is ideal.

The format of a teleconsultation is different to that of a normal clinical interview: the psychologist is in a different location and it is a third party who welcomes the patient to the room and switches on the videolink [19, 25, 29]. The establishment of rapport between the teleconsultant and patient should not be a problem if the remote clinician greets the patient by name, introduces him or herself and explains the purpose of the meeting. Teleconsultations become easier and more routine with practice, but some thought needs to be given to beginning and ending the consultation. In some studies, an assistant clinician remained with the patient and was responsible for welcoming and seating the patient, switching on and off the link and providing pens and paper if written tests were conducted [19–21]; other less qualified staff could fulfil this role with some basic training.

For the interviewer, the movement of the camera during the consultation can be distracting, although this distraction tends to decrease with practice. We recommend that the teleconsultant masters the controls in advance, and uses pre-programmed camera positions (e.g. a view of the patient's head and shoulders, and a view of the answer sheets) to minimize the disruption of zooming and adjusting the camera angles during the interview. Document cameras can transmit a clear view of paperwork laid flat on the patient's table: they have been used successfully in routine psychological teleconsultations between a hospital and a nursing home 50 km away [30].
A common problem with teleconsultation is the phenomenon of ‘gaze disjunction’ caused by the fact that the cameras are placed several centimetres above the television monitors [29]. When the psychologist looks at the patient on the television screen, she is not looking directly into the camera lens; from the patient’s point of view, the clinician is not meeting his/her gaze (and vice versa). This can be unsettling at first, especially for patients who have only one experience of teleconsultation. Optical devices are available to correct this problem, although users tend to adjust with experience.

In scoring written test material, there may be difficulties when a patient uses fine pencils or light-coloured inks. We recommend that patients are routinely provided with sheets of white A4 paper and black felt-tip pens. Written instructions (such as ‘Close your eyes’ in the MMSE) can be presented to the patient via the document camera. This command should be typed in large letters to ensure that it is seen clearly, as some handwriting styles are difficult to read from the screen.

Conclusions

This review indicates that psychological teleconsultation is feasible with many elderly people, provided that patients do not have marked sensory impairments, that the equipment used is reliable, and that a routine procedure is established in advance for welcoming the patient and conducting the assessment. Further research is required, using larger samples of older people, to establish the feasibility of conducting remote interviews and tests in real-life rather than experimental settings. Also, the reliability of more complex psychometric and neurological batteries needs to be explored before these types of specialist assessments can be conducted routinely by videolink.

Key points

- Although elderly people are one of the major target groups for telemedicine applications, they remain under-represented in studies of teleconsultation.
- Studies of teleconsultation and telecare indicate that videolinks are easily used by many elderly people as a means of communicating with health-care staff, including psychologists and doctors.
- To date, studies of psychometric teleconsultation have been confined to screening tests, or have used very small numbers of patients. There is a need to examine the reliability of more complex psychometric batteries and to use larger samples of older people.
- Psychological teleconsultation is feasible with many elderly people, provided that patients do not have marked sensory impairments, that the equipment used is reliable, and that a routine procedure is established in advance for welcoming the patient and conducting the assessment. Ergonomic considerations, patient comfort and professional preparation are also important.

References