

Enhancing psychosocial care for people with cancer in rural communities: what can remote counselling offer?

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Abstract

Rural cancer patients are often disadvantaged in access to psychological services. We reviewed remote counselling research for psychological support using telephone, videoconferencing, and the Internet as a potential solution. Telephone counselling is the most extensively researched, while there are encouraging findings in emerging research about videoconferencing and Internet-based psychological care. Where no face-to-face psychological service exists, these technologies are promising, yet unproven. Less variable methods are needed to better assess the technology and therapeutic approach for stronger evidence.

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THE ADVERSE PSYCHOLOGICAL impact of cancer has been described clinically for many years, and, more recently, methodologically sound studies have confirmed the high prevalence of disorders such as anxiety and depression.^{1–3} Encouragingly, there have been significant advances in the development of psychological support strategies for people with cancer, validated in randomised controlled trials (RCTs) and meta-analyses and recommended in evidence-based clinical practice guidelines.^{4–9} In Australia these recommendations have been set out in psychosocial clinical practice guidelines which are being implemented across diverse treatment settings nationally.^{6,10} More than a third of Australians live outside major cities, with 3% living in only moderately accessible, remote or very remote areas.^{11,12} A key challenge, therefore, is to implement these recommendations to support patients geographically distant from the major urban treatment centres, where local psychology services are either unavailable or under-resourced.

Australia is not alone with challenges of providing psychological services to regional and remote

What is known about the topic?

There is significant psychological morbidity associated with a cancer diagnosis and treatment in adults. In recent years evidence-based guidelines, with level one evidence recommendations, have shaped the provision of psychological and supportive care for Australian cancer patients in major treatment centres. How best to implement these guidelines in geographically remote locations, without access to face-to-face specialist psychological services, is less well reported.

What does this paper add?

This paper reviews three modalities for providing “remote” psychological services for cancer patients, by the telephone, videoconferencing and the Internet. The paper critiques the available research from Australia and internationally to determine how feasible the technology is to deliver psychological services remotely.

What are the implications for practitioners?

Technology alone does not ensure implementation of evidence-based psychological care. The best available research supports the telephone, while videoconferencing is promising and can facilitate a closer liaison between rural health professionals and specialist psychological services. The use of the Internet is also encouraging yet to be effective it requires that the practitioner is clear in the purpose and design of the intervention.

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communities. In the United Kingdom for example, 11 million people live in rural areas, and in Scotland specifically, the proportion is more than 30%, with geographic factors limiting access to mental health services.^{13,14} In North America almost a third of the population live in rural areas and there is an uneven distribution of physicians, leading to inequalities in accessing appropriate treatment.¹⁵⁻¹⁸

People living in isolated areas with limited access to health care services have been reported to be in poorer health than those in metropolitan areas.¹⁹⁻²¹ The psychological needs of cancer patients in rural areas are at least equivalent to, if not greater than, those of their urban counterparts.²²⁻²⁵ There are fewer professionals available to treat mental health problems, both in absolute and per capita numbers.^{26,27}

In addition to access to specialist care, rural patients have fewer alternative supports and face issues relating to confidentiality and the stigma of mental health problems in rural communities.^{22,28,29} Distance to treatment centres often means further out-of-pocket expenses associated with travel and accommodation, and disruption to family life.^{19,29}

Telephone counselling

The telephone has long been used for counselling and offers a number of advantages. For example, it allows access to services and follow-up for home-bound or physically impaired patients who would otherwise face geographical or mobility barriers.³⁰ It may also provide a greater sense of confidentiality compared with face-to-face services, is affordable and widely available.³⁰

A recent review found that telephone help lines in Australia are widely used for emotional needs associated with adverse life events such as sexual assault or cancer.³¹ Yet despite apparent popularity, the benefits of many services have not been evaluated.³² Studies have described interventions combining face-to-face with telephone contact with positive outcomes.³³⁻³⁵ For instance, in the UK an RCT with over 300 patients found that a very brief cognitive behavioural therapy (CBT)

intervention promoted earlier adjustment to illness among patients at high risk of developing affective disorders.³⁵

Counselling via videoconferencing

Videoconferencing, (live, two-way audio and video transmission) integrates some of the advantages of telephone and face-to-face psychological intervention. It has been found to be a feasible and satisfactory means of service delivery which allows reliable evaluation and yields positive outcomes in non-cancer populations.³⁶ Wootton and colleagues have provided a comprehensive overview of “telemedicine”,³⁷ and review articles related to “telepsychiatry”^{36,38,39} and “telepsychology”⁴⁰ are also available.

Videoconferencing technology has been available for many years, yet the quality of research to date has been disappointing.³⁹ Most studies have been descriptive, or have methodological problems, including very small sample sizes.³⁸ Furthermore, a range of financial, technical, administrative, political and clinical barriers can impede successful program implementation and sustainability.⁴¹ Current research does not fully resolve whether patients would prefer the use of videoconferencing over face-to-face services.^{39,42}

Counselling via the Internet

Internet counselling or online therapy has been defined as “synchronous and asynchronous communication online or through email between a counsellor and a user” and is currently a smaller, newer support technology than telephone counselling.³² Fee-based Internet counselling, often provided by private practitioners, is readily available and predicted to increase.^{43,44}

Because of its diverse capabilities, specific consideration needs to be given to the intended therapeutic purpose of the Internet in providing support. The Internet has been used to provide passive information, structured treatment programs, individual and group therapies and support groups. Research related to the effectiveness of and methods used in Internet counselling is

sparse, paralleling the novelty of the field and difficulties in evaluating interactions.⁴³ Online support groups for a range of mental and physical health complaints have been studied, although sample sizes have been small, making results difficult to generalise.⁴³

The current review

In this review we summarise the research on remote counselling technologies that have been trialled to provide psychosocial support for adults with cancer. "Remote counselling" is defined here as psychological counselling provided by health professionals at a distance using telephone, videoconferencing and the Internet. The use of remote support to provide information counselling or to obtain information is reviewed elsewhere,⁴⁵⁻⁴⁸ as are models which combine the different technologies, and where treatment is triaged according to patient need.⁴⁹⁻⁵¹ There are many potential applications of remote technologies. Our experience has prompted us to focus on the potential options in non-metropolitan settings.

Methods

For each of these remote technologies we asked:

- What empirical research is available using this "remote counselling" technology for cancer patients with regard to acceptability, feasibility or utility?
- Where there are few available studies in oncology, we ask what research from other health populations may assist in relation to using this "remote counselling" technology for cancer patients?

We reviewed the literature for remote counselling for people with cancer between 1966 and March 2007 by searching the Medline, PsychInfo, Embase and Cochrane Library databases using the key words: neoplasms, videoconferencing, telepsychiatry, telepsychology, teleconferencing, telephone, communication, remote consultation, Internet, web, online, psychological, psychotherapy, cognitive behavioural therapy, outcome. Relevant articles were identified by combining the

term neoplasms with terms related to psychotherapy and combining these terms with terms related to the type of technology. Reference lists from these sources were searched for additional trials.

Our primary focus was on studies involving rural participants, however, where there were few such trials, we included all outcomes-based work on each technology and where possible provide details of location of participants. Review papers and articles on remote counselling for other populations were included where the technology had little oncology research available. Cost effectiveness analyses are not included, and studies were excluded if they reported on outcomes from less than 10 participants.

Results

Telephone counselling

An earlier review found that telephone interventions resulted in positive feedback from patients and general improvement in psychosocial status over time, but with no statistical differences between experimental and control groups.⁵² Studies reviewed include telephone or face-to-face contact and vary in the timing and duration of the intervention, individual and group programs, and different therapeutic interventions (Box 1).

A recurring observation is that treatment centres participating in trials have comprehensive psychosocial support as part of their standard care, making it difficult to demonstrate any advantage of the trial technology.^{53,54} For example, a large, well designed RCT of 222 women with breast cancer tested two brief therapies provided by telephone: breast cancer health education or emotional expression against usual care.⁵⁵ No treatment effects were found for either mood or quality of life. The authors reasoned that participants were mostly rural Caucasian adults with a fairly good prognosis and that a policy of screening before enrolment may have identified those most in need of assistance. An additional limitation was that a further 69 women declined participation and yet there are few details why.

I Summary of outcome studies of remote counselling via telephone for people with cancer

Study	N	Participants	Type of intervention/frequency and no. of sessions/duration	Location/provider	Study type	Outcomes/ measures used	Main findings	Comments
Garrett et al (2003) ⁵⁶	304	Early stage (I, II, IIIA) breast Ca. Completed Tx (except Tamoxifen)	Individual – stress management. 16 phone calls over 12 months. Targeted print material. Study = 12 months. F/up = 18 months	USA/ enrolled onsite at 23 hospitals nationwide/ masters-level counsellors	RCT. 18-month follow-up. Control = standard care + survivor resource directory	Intrusive thoughts (IES-1); depression (CES-D); sexual dysfunction	Improvements in distress, depression and sexual dysfunction. Small effect sizes	Compared to usual care
Sandgren and McCaul (2003) ⁵⁵	222	Breast Ca, 1–3 months post Dx, stages I–III. Undergoing adjuvant Tx. 42% from communities less than 2500. On average they travelled 54 miles to clinic	Education group = manualised intervention: 5 weekly 30-min phone calls with a 6th call 3 months later. Emotional expression group = focus on emotions. Same number of calls	USA/ oncology certified nurses trained & supervised by clinical psychologist	RCT. 3 arms, cancer education, emotional expression or standard care. For standard care, usual nurse helpline available	Perceived Stress Scale; Cancer Behaviour Inventory; FACT-B; POMS	No Tx effects for mood or quality of life	Used well validated measures. Number of possible explanations given for negative results. Standard care included "helpline" hence intervention may not have been differentiated enough
Coleman et al (2005) ¹⁰⁵	106	Non-metastatic breast Ca. 2–4 wks post-surgery. Urban & rural	13 months of support + one-off mailing of resource kit (written manual, audiotapes, videotapes & pamphlets). Flexibility re: topic choice depending on relevance	USA (Arkansas & New Jersey)/ oncology nurses & social workers	RCT. Multisite 2 group experimental study. Repeated measures. Control = education kit	POMS, VAS – worry; Relationship Change Scale; UCLA Loneliness Scale – Version 3; and modified Symptom Distress Scale	No significant differences between groups, and both improved on some outcomes	Bibliotherapy alone can be very effective. May be that more specialised professionals more suitable. Data unavailable for other supports used
Heiney et al (2003) ⁵⁹	66	Breast Ca, stage I & II; from 2 sites of a private oncology practice, both urban & rural	Therapeutic support group. 6 sessions held weekly, 90 mins. Based on Yalom's therapeutic factors. Assessed at pretest, immediately after intervention & 3 months after group ended	USA (South Carolina)/ group therapists (masters in education or psych nursing)	RCT. Control = usual psycho-social care	QOL; POMS; immunophenotyping and immune function	Improvement during intervention and deterioration afterwards	Only 66 of possible 192 participated with unclear reasons for declining
Hagopian and Rubenstein (1990) ⁵⁴	55	Patients having radiation therapy for cure. All Ca types. 28.6% with breast Ca. Equal men & women	Individual support and education. 4, weekly phone calls in addition to usual care. Standardised set of topics	USA (University of Pennsylvania)/ research nurse who was not involved in daily care	RCT. Control = usual care	STAI; Side Effects Profile; Coping strategies Profile; telephone survey	No significant differences in anxiety, severity of side effects & coping strategies of calls. Both groups received care from collaborative team	More rigour needed in terms of standardising time and content of calls. Both groups received care from collaborative team
Campbell et al (2007) ¹⁰⁶	30	30 couples. African American prostate Ca survivors & partners. Durham, Nth Carolina & surrounding communities	Coping skills training. 6, weekly, 1-hr telephone sessions on speakerphone	USA/ African American doctoral level medical psychologists	RCT. Control = routine care through medical outpatient program	<i>Survivor measures:</i> SESCI; EPIC; SF-36 <i>Partner measures:</i> partner version SESCI; POMS-SF; CSI	Intervention produced moderate to large Tx effects for QOL related to physical Sx. Partners reported less caregiver strain, depression & fatigue & more vigour	From screening to post-Tx low take-up rate. Some analyses underpowered by small numbers. Final data included 12 couples from intervention arm & 18 from routine care
Donnelly et al (2000) ⁵⁸	14	14 breast Ca & 10 partners. High dose chemo	Individual. Interpersonal psychotherapy. Variable number of sessions (av. 16). Calls lasted 42 mins on av (range 15-95 mins). Assessed at study entry, after chemo & following intervention	USA/ clinical psychologist	Single-arm pilot study — pre-post	Patient and partner satisfaction; MHI; Psychological Distress	Good levels of satisfaction	Small sample size precluded comment re: change in psychological distress. More methodologically sound RCT has followed

av = average. Ca = cancer. Chemo = chemotherapy. Dx = diagnosis. QOL = quality of life. RCT = randomised controlled trial. Sx = symptoms. Tx = treatment.

Instruments: CES-D = Center for Epidemiological Studies Depression Scale. CSI = Caregiver Strain Index. EPIC = Expanded Prostate Cancer Index Composite. FACT-B = Functional Assessment of Cancer Therapy — Breast Instrument. IES = Impact of Events Scale (I — Intrusion subscale); MHI = Mental Health Inventory. POMS = Profile of Mood States. POMS-SF = Profile of Mood States Short Form. SESCI = Self-efficacy for Symptom Control Inventory. SF-36 = Short Form 36 Health Survey. STAI = State Trait Anxiety Inventory. VAS = visual analogue scale.

Similarly, in a large RCT of early-stage breast cancer patients following adjuvant treatment, the intervention group showed lower levels of distress, depression and sexual dysfunction at 18 months follow-up than controls. The effect sizes were small.^{56,57} Given the duration of treatment and adequate methodology used this may indicate that usual care was of a high standard. Targeting those in need of intervention at baseline (as determined by clinically significant levels of distress) may have led to larger effect sizes.

Promising results have emerged when specific, evidence-based therapies have been trialled. For example, a pilot study aiming to reduce psychological distress and to enhance coping during treatment found that interpersonal psychotherapy by telephone for cancer patients and their partners is feasible during oncology treatment.⁵⁸ More specifically, accrual, participation and participant satisfaction ratings indicated the feasibility of this intervention. A complex relationship between psychological distress scores and efficacy was found, possibly due to treatment occurring during chemotherapy, which is generally expected to be a time of increased distress. A larger, randomised controlled trial comparing standard telephone and videophone to a control group for women with advanced lung cancer has been conducted and the data collection phase has been completed (Jimmie C Holland, MD, Chairman of Department of Psychiatry and Behavioural Sciences, Memorial Sloan-Kettering Cancer Centre, personal communication, May 2006).

The telephone has been used less frequently for group interventions in oncology. In a pilot study, 66 women with stage I or II breast cancer were recruited to an RCT of telephone group counselling compared with "routine psychosocial care".⁵⁹ Each telephone counselling group was led by two experienced professionals and met via a 90-minute telephone conference call weekly for 6 weeks. Measures of quality of life and mood improved during the intervention, yet were not maintained after the 6-week intervention concluded. The study nevertheless provided data to aid further development of remote counselling on a group basis.

Acceptability of telephone counselling

More than a decade ago, 80% of breast and prostate cancer patients stated that they would contact a telephone counselling service for individual support,⁵² and both individual and group telephone counselling services specifically for cancer patients have been reported as feasible and acceptable.⁵³

Remote counselling via videoconferencing

The efficacy or acceptability of remote counselling using videoconferencing for cancer patients has yet to be established. Four published pilot studies provide some guidance to the feasibility and acceptability of the approach for the cancer population (Box 2).

Olver and colleagues trialled videoconferencing in oncology and the use of videophones to supplement palliative care outreach.^{60,61} The videophones were easily transported to patients' homes and connected via the existing home phone line. The service was not designed to replace visits, but, in areas difficult to access frequently, it increased contact and support between specialist palliative care nurses and patients between visits, with positive evaluations by the nurses.⁶⁰

An American group reported on the delivery of breast cancer support groups run by an oncology social worker via videoconferencing which demonstrated acceptability, feasibility and significant decreases in depressive and traumatic symptomatology from pre to post-treatment.⁶² Another study described remote counselling via videoconferencing for terminally ill cancer patients who had difficulty accessing standard services because of their physical condition and distance from the treatment centre.⁶³ A psychiatrist treated 10 patients individually for six sessions of cognitive therapy. Sessions alternated, however, between face-to-face sessions and remote sessions using videoconferencing equipment (a module combining a telephone and a three by four inch video monitor). Participants were positive about the service.

In the fourth pilot study, two of us (LS, DG) examined the feasibility and acceptability of this mode of treatment delivery in rural Australia.⁶⁴ In

2 Summary of outcome studies of remote counselling via videoconferencing for people with cancer

Study	N	Participants	Type of intervention	Location/ provider	Study type	Outcomes/ measures used	Main findings	Comments
Collie et al (2007) ⁶²	27	Women with breast Ca, in Intermountain region of NE California (large rural area). Average age, 61 years	4 professionally led support groups, based on Stanford Supportive-expressive model. 8, 2-hr weekly support sessions	Rural USA/ licensed clinical social worker	Pilot study. Pre-post measures	CES-D; PTSD checklist—specific version; CBI; CECS	Significant decrease in depressive and PTSD Sx. No significant change for self-efficacy for coping with breast Ca nor emotional expression	All reported feeling better and that they would recommend to others. Groups were feasible. Well accepted by older group of women, contrary to stereotypes. Limited other conclusions due to no control group
Shepherd et al (2006) ⁶⁴	25	All rural adults with range of Ca. 56% metastatic or advanced disease; 84% receiving Tx, mostly Chemo	Brief, individualised cognitive behavioural therapy. Average 3, 1-hr sessions. 2/3 received 1–3 sessions	Rural NSW, Australia/ masters level clinical psychologist based in Sydney	Pilot study. Pre-post measures	HADS; FACT-G; patient satisfaction (17 study specific questions regarding acceptability, feasibility & satisfaction)	Benefits in anxiety ($P=0.01$) & QOL ($P=0.04$). Well accepted	Satisfaction extremely high. Most were neutral about preference for face-to-face or videoconferencing session
Cluver et al (2005) ⁶³	10	Terminally ill Ca patients with Dx of adjustment disorder or major depression	6 sessions of individual cognitive therapy with same therapist; sessions alternated between face-to-face & remote by analogue videophone	USA/ psychiatrist	Pilot study	No standardised outcome measures reported — after each session brief questionnaire given to assess: patient satisfaction; sense of connectedness to therapist; & overall progress in therapy	Strong positive perceptions of sessions reported regardless of mode of delivery	Preliminary data suggesting a role for low-bandwidth (hence cost-effective) videophones

Ca = cancer; Chemo = chemotherapy; Dx = diagnosis; QOL = quality of life; Sx = symptoms; Tx = treatment.

Instruments: CBI = Cancer Behaviour Inventory; CES-D = Center for Epidemiological Studies Depression Scale; CECS = Courthauld Emotional Control Scale; FACT-G = Functional Assessment of Cancer Therapy — General version; HADS = Hospital Anxiety and Depression Scale; PTSD Checklist = Post Traumatic Stress Disorder Checklist.

a single group design, 25 cancer patients with varying diagnoses and stages of disease received an average of 3 sessions with a clinical psychologist providing brief CBT. The results indicated that patients experienced significant changes, with reduced anxiety and improved quality of life.

As there are few studies on the use of videoconferencing for people with cancer, we consulted the broader mental health literature on videoconferencing. A number of studies have found evidence to support the efficacy and acceptability of videoconferencing for psychiatry.^{38,40,65-67} The clinical outcomes literature, although currently small, indicates that telepsychiatry may improve outcomes or stabilise patients with chronic, deteriorating courses.³⁷ American researchers presented data to demonstrate equivalence in symptom reduction in depression treated by videoconferencing compared with face-to-face treatment.⁶⁷

In a small number of reports specifically involving a psychologist, CBT was provided to isolated Scottish communities via videoconferencing.^{68,69} Most patients were satisfied with the approach, although there were complaints that poor sound and picture quality distracted from the communication. Similar treatment outcomes are reported with face-to-face, two-way audio and videoconferencing.⁴⁰ Videoconferencing appears to be a feasible option to provide psychological interventions for patients in rural health services.⁴⁰

Acceptability of videoconferencing

A systematic review of telemedicine found a mean overall patient satisfaction rating of 92% based on 38 studies.⁷⁰ The authors cautioned, however, that findings from the available research (mostly pilot and feasibility studies) do not easily apply to situations where telemedicine may become a substitute for standard health care delivery. Multiple barriers to the implementation of telemedicine have also been noted in relation to technical knowledge, economics, organisational factors and behavioural knowledge.⁷¹

In mental health, there have been high patient and professional satisfaction and acceptance ratings for the use of videoconferencing for treat-

ment and assessment, including for elderly and rural patients.^{39,72} Most patients are able to speak freely using the equipment, rate their preference for using it on subsequent visits, positively rate the experience with the specialist and prefer videoconferencing (with visual cues) to consultation by telephone.³⁷

Satisfaction with remote counselling via videoconferencing is not universal.⁶⁷ Concerns reported include confidentiality, perceived impersonal nature of contact, lack of knowledge about the technology, or problems with hearing or vision and age, however the latter may also reflect a general reluctance of older adults to use mental health services.⁷³

Satisfaction with videoconferencing varies among health professionals. Clinicians report being highly satisfied with videoconferencing;^{42,74,75} satisfaction seems to increase with familiarity,^{76,72} and is higher for rural providers.⁷⁶ In contrast, health professionals reported that videoconferencing hinders communication and interferes with the ability to form a therapeutic alliance.⁶⁰ Previous studies have reported that stakeholder consultation at the introduction of videoconferencing technology may assist implementation.^{77,78}

Remote counselling via the Internet

More people with cancer are considering the Internet in relation to their illness, including information and support needs.^{79,80} Owen and colleagues found that of 136 women with breast cancer, 70% had access to the Internet and two-thirds felt that Internet-based psychological therapy would be as helpful as face-to-face treatment.⁸¹ We were unable to identify existing research specifically in the oncology literature regarding the provision of individual counselling via the Internet.

We identified multiple studies on remote counselling for people with cancer via the Internet, all of which were online support groups (OSGs) (Box 3).

OSGs can take different forms including: newsgroups (in which messages appear as running lists of comments or questions), listservs (which auto-

3 Summary of outcome studies of remote counselling via the Internet for people with cancer

Study	N	Participants	Type of intervention	Location/ provider	Study type	Outcomes/ measures used	Main findings	Comments
Gustafson et al (2001) ⁹⁰	246	New Dx breast Ca (last 6 months); under age 60 years; from 5 sites — patients from urban, small city & rural areas, including all SES	CHES — online support group with minimal moderation from health professionals, provided on home computer for 6 months. Control group: copy of Dr Susan Love's <i>Breast book</i> . Assessed at pre-test, post-treatment (2 months) & 5 months f/up	USA (midwest)/ content designed by clinician & patient panels	RCT. Control = standard care plus educational book	Social support & information; participation-related measures; QOL — Fact-B	Improved social support, information competence; participation in health care; QOL	Benefits stronger in short term. Not suitable for less literate patients
Gustafson et al (2005) ⁸⁷	229	Women : recent Dx breast Ca (within 1 year); low income earners; most living in rural areas	CHES — provided on home computers for 4 months. Participants randomly assigned to either having a peer advocate (someone who personally cared about their use of CHES) or not. Peer advocates were previous CHES users, breast Ca survivors, at least 1 year from treatment	USA (midwest)/ content designed by clinician & patient panels	Population-based intervention. All 229 received CHES, compared with control group (n=51) with similar demographics from a separate RCT	Web browser to track web use; FACT-B; 10-item Negative Emotions Scale; 3-item Health Self-efficacy Scale; participation in health care 8-item scale; 5-item Health Information Competence Scale	CHES group was superior to control in 4 of 8 outcome variables at both statistically and practically significant levels (social support, negative emotions, participation in health care, and information competence)	Appears that an eHealth system such as CHES will be used extensively and have a positive impact on low-income women with breast Ca. Participants used the system as much, if not more, than more advantaged counterparts
Winzelberg et al (2003) ⁹¹	72	Primary breast Ca; diagnosed within 32 months; no suicidal ideation; recruited via media & oncology offices; metropolitan & most highly educated	Electronic support group of 12-weeks' duration. Based on supportive-expressive group therapy. Moderated by health care professional. Delivered in asynchronous newsgroup format. Not designed as a form of psychotherapy	USA (California)/ mental health professional	RCT. Control = waitlist	CES-D; PTSD checklist; STAI; Perceived Stress Scale; Cancer Behaviour Inventory; Mini-MAC	Moderate effect sizes (0.38–0.54); improvements in depression, perceived stress, and cancer-related trauma	No significant change in anxiety. Difficulties for some participants in accessing web page. 34% in either support group or individual counselling at baseline. Included ITT analyses
Gustafson et al (1993) ⁸⁶	30	Breast Ca	CHES — online information, decision-making & emotional support. Online support group with minimal moderation from health professionals	USA/ content by clinicians & patient panels	Two pilot studies	Quantitative survey of reactions to CHES. Telephone survey to assess satisfaction	Easy to use; seen to be beneficial; discussion group used often	Limited conclusions as no comparison group. Unclear if beneficial for more disadvantaged patients
Lieberman et al (2003) ⁹²	32	Breast Ca, 78% Stage I or II; rural/small towns, 49%; medium-sized cities, 41%; large cities, 10%	Electronic support group. Moderated by health professionals	USA/ trained group facilitators (psychologists, nurses and social workers)	Open trial. Pre-post measures	CES-D; Posttraumatic Growth Inventory; Pain and Courtauld Emotional Control Scale	67% found group beneficial; improvement in depression and "reactions to pain"	Limited conclusions due to no control group

Ca = cancer; Chemo = chemotherapy; CHES = Comprehensive Health Enhancement Support System; Dx = diagnosis; ITT = intention-to-treat; QOL = quality of life; RCT = randomised controlled trial; SES = socioeconomic strata; Tx = treatment.
 Instruments: CES-D = Center for Epidemiological Studies Depression Scale; FACT-B = Functional Assessment of Cancer Therapy — Breast instrument; Mini Mac = Mini Mental Adjustment to Cancer; PTSD Checklist = Post Traumatic Stress Disorder Checklist; STAI = State Trait Anxiety Inventory

matically distribute messages via email to names on a list), and chat rooms (communication in real time through messages posted to registered users).

OSGs may be unfacilitated, peer support forums or structured, professionally moderated groups. While the emerging definitions of “online therapy” and “online therapist” are a source of debate,⁴⁴ in this review our focus is on remote counselling by professionals. While there are likely social support benefits of online peer-to-peer groups there are also potential shortcomings. For example, key cues, such as a participant expressing fears relating to death, have been observed to go unacknowledged in such forums.⁸²

Technology can be adaptively used to either “dampen” interpersonal communication or to “heighten” intimacy and solidarity.⁸³ The disinhibiting effect of online communication may encourage therapeutic expression and self-reflection such that participants may “cut to the chase” with the potential for a speedier improvement in distress.⁴⁴ Other advantages of OSGs over face-to-face groups include the absence of geographical and mobility barriers, anonymity for sensitive issues and the possibility of patients with rare conditions finding peers.⁸⁴

Disadvantages of the OSG vary from the volume of email received to lack of in-person contact. In some circumstances, OSGs may exacerbate a participant’s feelings of social isolation and reduced psychological wellbeing instead of strengthening a sense of social support.⁸⁴ One study reported significantly higher levels of depression in oncology patients who take part in OSGs compared with those who attended face-to-face support group meetings.⁸⁵ This uncontrolled cross sectional study had methodological constraints and the extent to which the Internet plays a causal or contributory role in the association with depression was not demonstrated. It may well be that depression affects a selection bias for Internet over face-to-face contacts. Nevertheless, “heavy use” of the Internet has been found in general community studies to contribute to social isolation and higher levels of depression by users

who become less engaged in interpersonal and social contacts outside their Internet interactions.⁸⁴

The possibility of adverse outcomes of Internet use reinforces the need to develop psychologically therapeutic interventions that may be delivered using remote counselling technology, rather than a reliance on a technology providing therapeutic remote counselling by virtue of its technical capabilities. It has also been noted that remotely delivered therapies may work best when those involved have met face-to-face at some stage.⁶⁰ A survey conducted among Australian health professionals identified a perceived impersonal characteristic of videoconferencing as a potential problem and led to the supplementation of video calls with face-to-face visits at least annually.⁶⁰

An early example of online support for cancer patients was the Comprehensive Health Enhancement Support System (CHESS), which contained integrated information, referral and a newsgroup-based social support program monitored by a facilitator.⁸⁶ A health professional checked daily that important messages (eg, “call for help”) were responded to and that “suicide-type messages” were referred to an expert (Professor David H Gustafson, Founding Director of Center for Health Sciences and Analysis, University of Wisconsin, Madison, May 2006; personal communication). Research indicates that CHESS is easy to use and valuable for women with breast cancer and their families and of benefit for women of low socioeconomic status.⁸⁷⁻⁸⁹ An RCT of newly diagnosed breast cancer patients using the CHESS system showed mixed results, with stronger short-term benefits but limitations for less literate participants.⁹⁰

In one study, 72 women were randomly assigned to either a 12-week web-based social support group for women with breast cancer (with a semi-structured, asynchronous newsgroup format moderated by a health care professional) or waitlist control.⁹¹ Effect sizes were moderate and participants perceived a variety of benefits and high satisfaction with the group. A similar study reported on the clinical outcomes

for 32 women with breast cancer who participated in professionally facilitated and “closed” OSGs for 1.5 hours weekly over 16 weeks.⁹² Improvements were made in depression and reactions to pain. Half were unable to participate due to scheduling difficulties. However, no comparison group was used so it is not possible to make clear conclusions about these results.

Other advantages of OSGs compared with face-to-face contact include anonymity, lower out-of-pocket expenses, and the potential therapeutic benefits of emotional disclosure through writing.⁹³ Difficulties and barriers must also be considered, most notably computer ownership and Internet access, computer literacy and familiarity in using the Internet.⁹³

Outcome studies of online therapy have yielded relatively consistent and encouraging findings for participants seeking help for a range of clinical concerns; including panic disorder, eating disorders, posttraumatic stress and grief.⁴⁴ Health psychology research has investigated Internet counselling for headache, insomnia, tinnitus, breast cancer and chronic pain.⁹⁴ Overall these studies support the Internet as a medium for the provision of psychological treatment, and in particular cognitive behavioural interventions.⁹⁴

An advantage of online interventions is that time constraints are removed and communication can be carried out asynchronously when face-to-face therapy is not usually available.⁹⁴ Disadvantages include lack of visual cues, misinterpretation of information and time delays as well as the need for reasonable computer literacy.⁴⁴ Suicide risk and complicated problem presentations bring other difficulties, however, patients are more likely to disclose suicidal plans to a computer than to a human being.⁹⁵ Patients who have severe psychiatric disorders and/or are hospitalised are not appropriate for online therapy.^{44,96}

Psychological therapy

A recent review of 15 randomised trials of Internet interventions for mental disorders and related conditions (many of which are identified in cancer patients) concluded that interventions were

effective in reducing risk factors or improving symptoms.⁹⁷ Many of the studies had methodological limitations such as small sample sizes, short follow-up periods, failure to conduct intention-to-treat analyses, problematic randomisation procedures, and failure to control for amount of contact by the group receiving the Internet programs.⁹⁷

CBT has most frequently been the intervention trialled using different Internet formats. In different studies it has been compared with routine care, face-to-face therapy, or the self-directed use of self-help books or manuals (ie, bibliotherapy). It has been argued that CBTs are compatible with the text-based medium of the Internet as they rely heavily on conscious processes and thinking.⁸³ This has some supporting evidence. In a community-based RCT, results indicated that CBT delivered interactively via the Internet was more effective than a credible control intervention in reducing depressive symptoms.⁹⁸

In Sweden, several studies assessed CBT delivery via the Internet for anxiety and depression.⁹⁹⁻¹⁰¹ Two direct comparisons between Internet and face-to-face delivered interventions identified in literature both found no difference between the two modes.^{101,102} A systematic review of 16 studies of computerised CBT concluded that this technology was potentially useful, particularly in the treatment of anxiety disorders, depression and phobias, but results were inconclusive because of methodological deficiencies in the studies.¹⁰³ Notably the review concluded that computerised CBT was equally effective to therapist-led CBT in several studies.

Discussion

Research on remote counselling for adults with cancer is still developing. Researchers have reported supportive results with regard to acceptability and satisfaction for each technology, and many report improvements in the outcome measures. Few substantive conclusions, as yet, can be drawn with confidence about treatment effectiveness using these remote counselling modalities. The following themes emerged.

Research into remote counselling by telephone far exceeds that of the two other technologies in volume and quality. Videoconferencing, and to a greater extent Internet counselling, are emerging technologies that have yet to establish an evidence base in their role as a way of conducting psychological therapies to adults with cancer.

There is no *a priori* reason to assume that the availability of a telephone alone improves one's psychological wellbeing, nor can we assume that a poor therapy, or a poor therapist providing a therapy will achieve better outcomes via telephone, videoconferencing or the Internet compared with a face-to-face session. In the studies reviewed, across all three technologies, when efforts are made to control the therapeutic purpose or standardise the psychological treatment employed as part of the trial, the research focus is more clearly on the effects of the technology. As a trend, results in these better controlled studies indicate that remote counselling can achieve equivalent outcomes to a face-to-face treatment option.

Methodological concerns are common in this area of research. Small sample sizes and a lack of experimental designs limit conclusions and the ability to generalise findings. When a comparison group has been employed in the research design, the definition of "usual care" has been poorly described, making comparisons between studies difficult.

Standardisation of the therapy, the control group and outcome measures would be beneficial to allow greater comparisons between studies. Identifying potential variables that may affect treatment outcomes, including disease and treatment details, differential effects of cues (visual, auditory, text) as well as geographical factors (eg, distance from treatment centre) will also assist. Specific observations about each modality are set out below.

Telephone counselling is well accepted and feasible. It is widely available and it has everyday familiarity. There are mixed findings about how well telephone interventions reduce psychological morbidity in cancer settings and it is likely to depend more upon the nature of the psychologi-

cal therapy employed than the use of the telephone *per se*. It is premature to recommend the telephone as a proven way to provide psychological support for adults with cancer. As well as more specific therapies for specific problems, the use of combined strategies with initial face-to-face contact and follow-up telephone contact may assist in the treatment of psychological problems.

Videoconferencing is a novel technology in remote counselling for cancer patients, with few, but encouraging, studies. For people with cancer in rural areas access to psychological interventions via videoconferencing is likely to assist adjustment to the emotional difficulties commonly associated with cancer. Limitations of videoconferencing may include service delivery cost and disruption to the therapeutic relationship, which may be balanced against the already demonstrated benefits of a patient's reduced out-of-pocket expenses, travel time, and confidentiality. Clinicians do struggle with videoconferencing. Training to optimise the use of the equipment for professionals may enhance the satisfaction levels with this technology.

Internet counselling has not been adequately evaluated for cancer patients. There are, however, a number of well designed studies on Internet counselling using CBT for mental health problems, conducted outside the area of psycho-oncology.

While adults with cancer present with diverse psychological needs, a helpful starting place may be to replicate, in oncology settings, the successful Internet-based CBT protocols from mental health research. Additionally, it will be useful to establish the role that age plays in acceptability of this technology, as many cancers affect older adults.

The Internet continues to develop as a complex and multifaceted communication medium. Like the telephone and videoconferencing, the success of the Internet, in research and clinically, in facilitating effective psychological support remotely, will be in part contingent upon the use of well defined and psychologically sound interventions. Careful consideration of the Internet's complexity as a communication medium is also

recommended in attempts to design and implement Internet-delivered psychological interventions for remote counselling for cancer patients.

To progress remote counselling for cancer patients who are unable to access face-to-face psychological services, better research is needed. From our review we suggest the following issues require additional research.

The use of comprehensive, individualised needs assessments is an important component of providing comprehensive psychosocial care. We were unable to locate any specific studies on remote assessment in cancer patients. Most papers in this review have not attempted to screen patients at enrolment based on psychological need. While the assessment of psychological needs in both inpatient and outpatient settings is gradually improving, the use of online technologies to provide screening questionnaires for those in remote locations merits study.

One or more of face-to-face, telephone, video-conferencing and Internet services could be integrated and offered to patients as deemed appropriate. As suggested elsewhere, it may be feasible for some patients to receive information plus minimal therapist contact via the Internet or telephone.⁵⁰ Given these different possible options, consultation to ascertain the unique needs of the remote areas will enhance the probability of a program being successfully implemented.

Comparison across technologies of established tailored treatment for specified problems (eg, coping with fatigue or anxiety) would enable incremental differences to be identified, as well as assessing service costs and out-of-pocket expenses. There is also the option of trialling “primed” remote counselling, that extends an initial face-to-face contact made during inpatient treatments at major centres with continuing remote care.

There is a potential for treatment innovation using these technologies, including the use of multi-media resources, such as other patients’ stories or access to prior audio recordings of one’s own sessions. For example, patients with phobias about needles or treatment could have guided

exposure to appropriate stimuli via an Internet or video feed.

Another important area of inquiry is the extent to which the individual clinician is an important determinant of outcome. In one meta-analysis it was argued that intense, shorter interventions carried out by more experienced and more highly trained clinicians may be more effective than lengthier interventions offered by less psychologically trained staff.⁹

There is a debate regarding the optimal length of psychological treatment.¹⁰⁴ It would be useful to evaluate whether different modes of treatment require different time commitments for optimal benefit. In addition there are obvious differences between time allocated per person in individual versus group treatment, and these differences need to be more clearly understood.

In conclusion, as noted by Winefield and colleagues,⁹³ the key questions that remain to be answered are “Who benefits?” and “How can we scientifically evaluate this technology for the future benefit of cancer patients?” The modes of communication reviewed represent potentially useful tools to enhance the quality of life of patients with cancer in non-metropolitan settings.

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Competing interests

The authors declare that they have no competing interests.

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