

Pelling, N. (2009). The Use of Email and the Internet in Counselling and Psychological Service: What Practitioners Need to Know. *Counselling, Psychotherapy, and Health*, 5(1), The Use of Technology in Mental Health Special Issue, 1-25.



The Use of Email and the Internet in Counselling and Psychological Service: What Practitioners Need to Know

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Abstract

The use of Electronic mail (email) and the Internet are no longer novelties but fixtures in numerous workplaces and the leisure activities of many. Since the mid 1990s counsellors and psychologists have debated the use of email and the Internet in applied work. This chapter reviews the most commonly identified arguments for and against the use of email and the Internet in client service provision. This information will assist practitioners in deciding if they wish to include in their work electronic modes of service. In addition, *set up* and *how to* information is provided, for those who wish to work in the electronic realm.

Clients and prospective clients are using electronic mail (email) and the Internet in their workplaces and as part of their leisure activities (Martin, 2003; Pelling, 1995a; Pelling, 1996). Counsellors and psychologists are also using email and the Internet (Pelling 1995b; Pelling 1995c; Pelling, 2000; Pelling & Renard, 1998; Sampson, Kolodinsky, & Greeno, 1997). As a result, it should not be surprising that a debate regarding the use of email and the Internet in applied work has long existed (Goss, Robson, Pelling, & Renard, 1999; Goss, Robson, Pelling, & Renard 2001; Pelling, 2002). What follows is a select examination of the common arguments for and against the use of email and the Internet in client service provision. It is hoped that this information will assist practitioners in deciding if they wish to extend their work to include electronic

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modes of service. Various *set up* and *how to* issues are then outlined for those who wish to begin applied work in the electronic realm.

Before, however, we begin our examination of email and Internet counselling it would be prudent to identify what is meant by email and Internet counselling. Electronic counselling, email counselling, ecounselling, cybercounselling, Internet counselling, chat room counselling, and video support telecounselling are all terms used to describe various forms of service mediated by electronic means. These terms all have in common the defining aspects of WebCounseling as outlined by Bloom (cited in Morrissey, 1997); the practice of professional service when the client and professional are in separate or remote locations using electronic means to communicate. This chapter is primarily concerned with the use of email and chat room services. Email and chat room services are provided by professionals who are located separate from their clients, use electronic means to communicate via the typed word, and result in communication with varying amounts of time delay between responses. A focus on email and typed based chat has been chosen as such communication modes are the most likely used forms of Internet counselling and psychological service provision (Pelling & Renard, 2000).

Definitions of the Internet and explanations of how email and chat rooms operate are beyond the scope of this chapter, readers interested in such detail are referred to Goss, Robson, Pelling and Renard (1999, 2001) and Sampson, Kolodinsky, and Greeno (1997). The reader is assumed to have a basic level of computer literacy and thus a working knowledge of email and the Internet. Let us now take a look at the arguments in favour of email and Internet use in applied service.

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The Pros and Cons of Electronic Service Provision

Arguments in Favour of Electronic Service Provision.

A number of arguments have been made in favour of electronic service provision. These include the ability of email and Internet contact to facilitate access to services, client privacy and disclosure, and ongoing client support and facilitating face to face (F2F) contact (Ainsworth, 2002; Bradley, Sullivan, & King, 2003; Caleb, 2000; Hamilton, 1999; Health Services Division, 2003; Hsiung, 2002; Koppel, 2001; Sampson, Kolodinsky, & Greeno, 1997). We will now look at each of these in turn.

Access Issues. Email and Internet services may facilitate engagement in counselling service for those who have access to technology and who may have difficulty with travel or affording the cost of F2F counselling. This group is likely to include some disabled individuals, those living in rural or remote areas, as well as children and teenagers. As a result, services may be provided to some individuals who would otherwise have difficulty accessing counselling or psychological professionals.

Access to services may also be facilitated by the flexibility afforded by electronic services. Namely, one can arrange to engage in counselling at unusual times, not just during standard office hours. Thus, access to services for those who engage in shift work could be improved by making services available electronically.

There are some, of course, whose access to counselling related email and Internet services is lacking. These individuals may include those with limited fluency in written

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English, people from non-English speaking backgrounds, and those with limited access to and use of computer technology.

Client Privacy and Disclosure. Those who are embarrassed to seek out counselling services can avoid visiting an actual counselling centre and engage in counselling electronically. Similarly, those who fear discrimination based on gender or racial status can keep such information private while engaging in counselling services, although this could negatively impact one's ability to receive multiculturally appropriate counselling. Thus, one's privacy can be enhanced by avoiding F2F services.

In general, email and the Internet are seen to be private spaces. Consequently, honesty and disclosure may be enhanced by electronic service provision. As a result, the Internet has been stated to have a disinhibiting effect on some individuals. This could be said to facilitate, enhance, and hasten the progress of applied work.

Ongoing Client Support and Facilitating Face to Face Contact. Electronic client contact does not always mean engaging in counselling services via email or the Internet. Electronic client contact could simply support ongoing client F2F contact via notes regarding appointment changes, follow-up or relapse services, encouragement, and the provision of information. Some indicate that client support activities versus direct counselling or psychological services is the best professional use of email and Internet contact.

Having an email and Internet presence can be an excellent marketing tool for counselling and psychological services. Prospective clients may decide to seek out service, electronic or F2F, on the basis of information available on the Internet. In

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addition, professional contact that begins as electronic contact may progress to F2F contact as a counselling relationship develops.

Arguments Against Electronic Service Provision

A number of arguments have been levied against electronic service provision. These include the lack of nonverbal and verbal cues, limits regarding counselling and psychological interventions and general efficacy issues, client and practitioner identity issues, counselling setting issues, confidentiality and security issues, and iatrogenic issues (Bailey, 2003; Bradley, Sullivan, & King, 2003; Caleb, 2000; Cooper, 2001; Cooper, Scherer, Boies, & Gordon, 1999; Davies & Lipsey, 2003; DeAngelis, 2000; Foxhall, 2000; Griffiths, 2003; Hall & Parsons, 2001; Hart, 2001; Hughes & Pakieser, 1999; Health Services Division, 2003; Hsiung, 2002; Kaltiala-Heino, Lintonen, & Rimpela, 2004; Kraut, Kiesler, Boneva, Cummings, Helgeson, & Crawford, 2002; Marshall, 2003; Mathews, Grant, & Littlefield, 2003; McLaughlin, & Milholland, 2000; Mingail, 2000; Murray, 2000; Murray, 2002; Osborne, 2004; Parker & Wampler, 2003; Pawlak, 2002; Pelling & Renard, 2000; Reed, Mattas Curry, 2000; Sanders, Field, Diego, & Kaplan, 2000; Shepherd & Edelman, 2001; Simon, 2000; Smith, 2001; Stofle, 2002; Wallace, 1999; Yager, 2002). We will now look at each of these in turn.

Lack of Nonverbal and Verbal Cues. The lack of nonverbal and verbal cues impacts interactions from both client and counsellor perspectives.

Counsellor and psychologist ability to observe clients is lessened by the absence of nonverbal and verbal cues. This could have a negative impact on counselling and

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psychological work. Closed body posture, diverted gazes, and tearful expressions may exist but are unable to be observed by professionals in typed communication.

Moreover, while some clients may be self aware and literate enough to indicate, in typed form, how they are feeling or interacting we must acknowledge that some will not. Indeed, even the most communicative client will only be able to disclose that about which they are conscious. A client who is unconsciously clenching their fist whenever they discuss a difficult family interaction will be unable to disclose this fact or have this brought into counselling.

Similarly, hushed or raised vocal tones are absent in electronic form. Thus, the client's ability to communicate may be unwittingly negatively impacted by communicating purely in typed form. This is the first way in which the lack of nonverbal and verbal cues can negatively impact counselling interactions.

The microskills approach to counsellor training proposes that effective helping skills are built upon a base of attending behaviour (Ivey, 1988). It has been argued that email and Internet chat fail to provide the basic counselling building blocks that enable helping relationships. Namely, attending behaviours involving eye contact, body language, and vocal qualities have no functional equivalents in the typed electronic realm. Thus, the second way in which the lack of nonverbal and verbal cues can negatively impact the counselling process is by impacting how the counsellor is presenting to the client. The interest and caring demonstrated by counsellor attending behaviours is missing in email and Internet counselling.

Limits of Interventions and General Efficacy Issues. Clearly certain interventions cannot be used when professional contact remains electronic in nature. For

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instance, play therapy, sand tray therapy, and other creative forms of interaction and expression do not translate well to a typed format.

There is little research indicating the effectiveness of email and Internet counselling and generally electronic means of service provision are viewed as less effective than F2F services. Electronic communication is considered especially inappropriate for clinical populations, versus self development or counselling populations, and those at risk of harm. Further research regarding both process and outcome is needed.

Client and Practitioner Identity Issues. Counsellors and psychologist have a duty to protect clients from harming themselves and others. Practitioners may have a difficult time intervening when needed if they do not have accurate client identity and contact details. This can make difficult situations in which a referral to a local counsellor or emergency services is required. Obtaining such identifying information, however, can be difficult if clients choose electronic contact for the assumed increase in privacy such contact provides.

A related aspect of client anonymity involves the *trying on* of different personalities and styles of relating. Internet communication is different from F2F interactions in that they tend to be more permissive, aggressive, and sexual. However, generally one often fails to integrate online and offline identities and it can be difficult for practitioners to know if the client being presented to them is a reality or a fantasy identity. For example, a 45 year old man may pose as an 18 year old woman.

Some young clients may similarly present themselves as adults. This can have an obvious negative impact on providing appropriate counselling to said individuals as their

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cognitive and emotional developmental levels are likely to be overestimated. In addition, a clinician has a duty to respond quite differently when a minor is talking about unwanted sexual contact than when an adult does so (mandatory reporting regulations). Moreover, in some parts of the world minors can only engage in regular counselling with the permission of a responsible adult. Thus, unwittingly providing counselling to minors can result in legal implications.

Identity deceptions or the withholding of important information can also prove clinically dangerous. For example, a client who makes contact for diet and exercise support but who is obviously underweight may be able to gain support in limiting their caloric intake by failing to mention or misrepresenting their body weight when asking for counselling support electronically. Such deceptions are more likely to be avoided in F2F contact because of the counsellor or psychologist's ability to observe the client. Similarly, the withholding of racial or cultural information can limit a practitioner's ability to provide multiculturally appropriate interventions.

Clients are also impacted by the lack of identity certainty afforded by electronic communication. Degrees and licenses to practice are often present in counselling and psychological offices (a requirement in some areas) and can help prospective clients assess the qualifications of their prospective practitioner. Moreover, many practitioners practice within a group, or via an official agency, which lends credibility to those who provide service within such groups. It may be more difficult for prospective clients to assess the qualifications of practitioners via the Internet, possibly leaving clients open to individuals who are not qualified to provide professional services and are *posing* as counsellors for financial gain or out of morbid curiosity. Although some online

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verification schemes for professionals exist, these are not in widespread use (see www.metanoia.org/imhs/directry.htm for an example).

Counselling Setting Issues. Clients and practitioners do not engage in counselling in public but generally in quiet, comfortable, and private offices. Clients and practitioners both need a quiet environment away from distractions to engage in electronic counselling and psychological services. Such a setting needs to be able to facilitate disclosure and ensure confidentiality as much as possible. A busy cyber cafe or lounge room in which one's partner can look over one's shoulder and read ongoing interactions will simply not suffice. Similarly, engaging in counselling while simultaneously viewing a television show is not appropriate.

Confidentiality and Security Issues. Confidentiality is not absolute. Counsellors and psychologists inform clients regarding the limits of confidentiality. Communicating electronically holds some special limitations that prospective clients need to know about.

Personal items are not discussed in public and email is not always secure, thus an email can be said to be public communication. The frequency at which emails are misdirected or lost makes this point clear – have you ever had an email sent not be received by its intended recipient or fail to receive an email someone has said they sent to you? Where did this email go? Did anyone ever receive the email? As a result, email communications need to use encryption and passwords to protect clients from computer hackers, curious individuals, and simple mail misdirections. Similarly, chat room discussions need to take place in secure sites. Of course, encryption programs are only as good as their latest version and passwords are only useful when kept private and not detectable by others.

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Practitioners need to remember that counselling and psychological services must conform to certain ethical standards regardless of the mode of communication used.

Confidentiality is one standard that needs to be protected.

Iatrogenic Issues. Providing services in electronic form can be iatrogenic in three main ways.

First, counsellors or psychologists could unwittingly encourage dysfunctional behaviours. For instance, continuing to engage in services electronically with those who have underdeveloped social skills and report to be lonely does little to develop social skills in reality and encourage appropriate social involvement. Indeed, research exists that suggests Internet communication may increase versus decrease difficulties for those who indicate experiencing high levels of loneliness. Such difficulties may include increased incidences of Internet addiction. As people increase the time they spend on the Internet they report decreases in family and social communication, thus experiencing increased feelings of loneliness and depression.

In addition, even in situations where one can ostensibly find social support on the Internet this can develop into an unhealthy connection. Such situations can occur when self help groups become a refuge not for supporting healthy behaviours but a covert way to share unhealthy activities. Recently, a number of support areas for eating disorders have been noted as developing into areas that can encourage one to continue with anorexic behaviour (i.e., sharing ideas for purging behaviour). A more sinister use of social support via the Internet is also possible. Namely, the well known ability of paedophiles to use the Internet for finding support from like-minded individuals.

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Similarly negative in nature, obsessive and extremely self critical individuals may work for perfection in their typed communications, writing and rewriting notes before sending them. Consequently, what is intended to be a therapeutic interaction could turn into a reinforcement of compulsive behaviours.

Second, Internet addiction may not gain the type of attention that narcotic addiction does in the press but it, nonetheless, has been identified in many and implicated in much human suffering. There are those who compulsively use email and the Internet. Thus, some clients or prospective clients are likely to be susceptible to developing such a compulsion. Certain authors have indicated that such addiction or Internet behaviour dependence is analogous to pathological gambling and involves long amounts of time spent on the Internet, environmental distress, deception regarding the amount of time spent on the Internet, and mood modification via internet use.

Some studies suggest as many as 9% of adolescents (cyberteens) and 10% of university students and 6-14% of the general population may experience Internet addiction. High Internet usage levels have been shown to negatively influence adolescent health, parental relationships, stress levels, and school achievement. For such individuals involvement in email and Internet communications, even service related, is possibly contraindicated. Luckily, there is some research to suggest that compulsive overuse of Internet resources may be a temporary condition for some or a newbie difficulty that dissipates once the novelty of the Internet lessons.

Third, an issue related to Internet addiction is the use of the internet to fuel other addictions. This includes gambling, shopping, and sexual related addictions including pornography. Individuals with a tendency towards or a history of such difficulties may

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need special monitoring when accessing the Internet to help ensure that the Internet does not become a convenient avenue for other compulsive behaviour. Similarly, as practitioners, we wish to increase healthy activity and discourage the physical inactivity of people or *mouse potatoes*.

Electronic Service Set up and How to Issues

Set up

A number of issues must be addressed before a professional engages in email or Internet counselling. These include location, insurance, record keeping, computer based difficulties, emergency situations, response frequency and structure, and fees. Let us now look at each of these in turn.

Location. A number of different topics relate to one's location. First, where are the people to whom you are to provide service located? Are you able to provide service there and where are clients to go if they feel they have been harmed and wish to make a complaint? For example, counselling is an activity licensed in The United States of America (USA) but not in Australia, where any regulation is currently voluntary. Is an Australian counsellor who is not licensed in the USA providing services illegally when

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engaging in counselling with a client located in the USA? Such legal matters may be contentious and practitioners are warned to err on the side of caution (Foxhall, 2000; Simon, 2000; Terry, 2002).

Second, where is your email or Internet practice to be located? Are you going to set up a solo site or join a group email or Internet practice? Deciding to set up a solo site may be difficult if you do not have the technological knowledge required to maintain a secure site, but gaining professional technical assistance could be costly. Such decisions require a number of business versus client focus questions be asked.

Third, where are you going to locate yourself when you are engaging in email or Internet service provision? Do you have a quiet and private space in mind? You will need to find a place free from distraction to give the best service to your clients.

Insurance. Professional indemnity insurance protects counselling and psychological practitioners when charged with malpractice. Such insurance also provides an avenue for clients to receive compensation from counsellors when necessary. Before engaging in email or Internet counselling practitioners need to check with their insurance provider regarding the extent of coverage they have and if this extends to electronic forms of service. Practitioners will need to know what limitations any such coverage may entail.

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Records. When working electronically counsellors and psychologists must determine how they are going to keep records and if this is to include a verbatim transcript of typed email or Internet chat interactions. Clients need to be made aware of record keeping practices, as they may be considered the legal owner of the verbatim transcript. The existence of verbatim transcripts can have an obvious impact on legal proceedings if any type of malpractice action were to result from the services provided.

Computer Based Problems. Practitioners also need to give thought to how they will deal with potential problems when working electronically. How will you deal with potential computer hackers, unwanted and unsolicited email (spam), potentially lost or misdirected emails, computer viruses, computer crashes, phone line or broadband difficulties, and power outages?

Emergency Situations. As previously discussed, counsellors and psychologists will need to determine what type of identity information they require from email and Internet clients prior to engaging in service provision, as identifying information may be needed if the practitioner is to respond to a client emergency (i.e., suicidal threat, harm to other threat, or admission of child abuse). Will you feel the need or be able to verify this information? Correspondingly, practitioners need to provide potential clients with emergency contact details for themselves and hopefully a contact in their area of location should a difficulty requiring phone or F2F contact arise.

Response Frequency/Structure. F2F practitioners need to determine if they are going to see clients weekly or fortnightly and for one hour or more. F2F practitioners also have to determine their regular business hours. Likewise, those providing service via email and the Internet need to determine how often to respond/send emails (daily,

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weekly, or fortnightly) or when to meet online and for how long, respectively. Will you consider ten short emails or postings equivalent to one very large email or posting? What will you do if inundated with a large amount of rambling postings? What will you do if cyberstalked by a client (Posen, 2003)? Will you put a maximum limit on the amount of email to be received from any one client and what will you do if this limit is tested by either a needy or demanding client?

Fees. If you are going to provide service electronically you will need to determine how much you are going to charge for service. You will need to determine if you are going to charge per amount of typed information (per word read and responded to), time taken to read and respond (minutes), or per email (irrespective of length). You will need to determine how you will obtain payment (bank draft, cheque, or credit card).

Set up: Conclusion. The above seven items are just a few of the things a potential email and Internet practitioner will need to think about and determine before offering applied services electronically. Obviously, providing applied services electronically is not a simple venture and not enabled by simply having an email account or access to Internet chat services. Setting up a F2F private practice is no simple task. We should not be surprised that setting up an electronic service is no simple task either. Sometimes technology does not easily or immediately make our lives and work simpler.

How To

Assuming those engaging in F2F counselling and psychological services are competent and hold the qualifications required to do so, it needs to be noted that

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competency in F2F counselling does not necessarily translate to competency in email and Internet forms of applied service. Practitioners need to engage in professional development and training to continuously increase their competence in various areas, including electronic service provision (Hsiung, 2002; Stamm & Perednia, 2000; Stofle, 2002; Yellowlees, 2002).

A number of training workshops and programs in email and Internet counselling exist. One such program is offered online via the American Counseling Association (see the course offered by Dr. John Bloom via www.counseling.org/resources_online for details). Practitioners need to assess if they are able to provide service in a competent manner using electronic means of communication and not provide said service if their competence is lacking (Reed, McLaughlin, & Milholland, 2000).

Because of the lack of verbal and nonverbal communication in email and Internet counselling practitioners need to make emotional connections in different ways. What follows is a simple introduction to two main interventions used in email and Internet counselling. Obviously, additional techniques and interventions are available via email and Internet contact. Interested readers are encouraged to gain additional training and supervision in the use of text based counselling interventions if they plan on engaging in email or Internet counselling.

Emotional Bracketing. Emotional bracketing is a skill to be used by the practitioner and can be taught to clients. Emotional bracketing occurs when emotional content is placed in square brackets within typed communication.

For example, a counsellor may type, “It was good for me to read that you are feeling less depressed this week [it makes me smile while I type this note to you, it makes me happy

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to know your mood is improving after your difficult personal work]. I hope we can continue to help you make improvements in your mood” thus indicating emotional content in square brackets. Such an expression of emotion is not immediately natural but when practiced can become more innate over time and practice. Emotional expressions of this sort can help build the connection between the counsellor or psychologist and client and thus enhance understanding and eventual efficacy of service.

Descriptive Immediacy. Descriptive immediacy is the typed equivalent to making a process comment or using immediacy in session with a client. Such comments are used by practitioners to deepen the connection between client and practitioner. Clients can also learn to convey information in such a manner. Specifically, descriptive immediacy is used to highlight a moment of emotion when a simple typed response is not enough. For example, a practitioner may type, “I have just finished reading your last message and I am feeling compassion for you and your situation. I can clearly read your desire for support and wish I could look in your eyes and let you know I am here for you” in order to demonstrate their caring and current reactions. Such comments can once again build the relationship to be formed between client and practitioner.

How To: Conclusion. In addition to being generally competent, technologically competent, and knowing the two text-based counselling interventions outlined above, practitioners need to be aware of and follow national and international email and Internet counselling standards. It is disheartening that many do not follow established standards for the ethical practice of counselling in the electronic realm (Heinlen, Reynolds Welfel, Richmond, & Rak, 2003). To not follow best practice as established in any area is to provide a lesser form of service and clients deserve the best possible care we can provide.

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The reader is referred to their local national counselling and psychological organizations for guidance, and especially to the resources made available by the American Counselling Association (www.counseling.org) and the American Psychological Association (www.apa.org) who have completed a large amount of work regarding electronic service provision.

Conclusion

Email and Internet counselling and psychological services are occurring. If practitioners are to engage in such services they need to be informed of the pros and cons of electronic service and be prepared to competently engage in said service. Similarly, clients and prospective clients must be able to give informed consent for service without coercion or pressure (Hsiung, 2002). This necessity remains despite the fact that increased levels of informed consent information regarding online counselling is likely to result in a decrease in desirability regarding those services (Barthelmeus, 2000). In order to give their informed consent, clients and prospective clients will need to know a variety of items including the pros and cons of said service and be explicitly aware of confidentiality issues and the benefits/ limitations of using encryption software, record keeping practices, the potential for computer difficulties, lack of efficacy research regarding electronic means of conducting counselling, and emergency procedures and contact details. A summary of necessary information can be provided via an informed consent document, a personal disclosure statement.

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The difficulties regarding providing service via email and the Internet have discouraged many practitioners from engaging in electronic service provision. Others have not been so discouraged and are engaging in electronic client contact. If the reader is not dissuaded but enthused by the notion of providing counselling or psychological services via electronic communication then I wish you a well informed trip on the Information Super Highway. Drive safely as the reputation of counselling and psychological service, your professional existence, and the welfare of clients are at stake.

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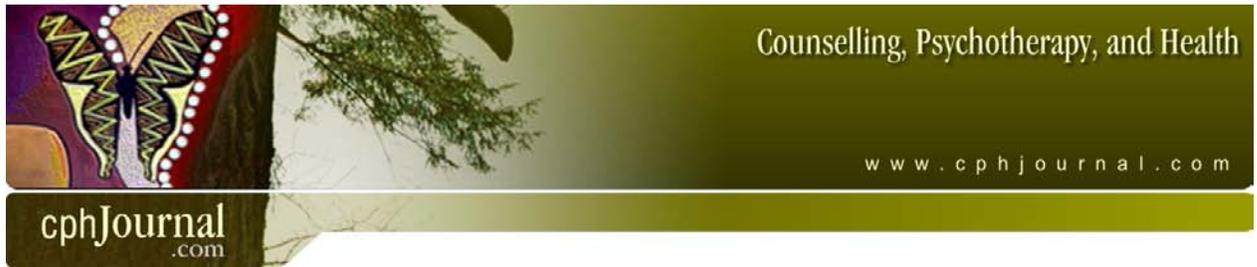
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Telepsychology and Telehealth: Counselling Conducted in a Technology Environment

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Abstract

Telehealth and Telepsychology is a mode of psychological service being provided over a technology-assisted environment. Presently, Telepsychology has integrated into traditional health services. However, the evolving nature of technology which has facilitated interaction of the client/professional relationship means that Telehealth can be viewed as separate or alternative services to mainstream health delivery systems.

Literature in this area has failed to investigate conditions that facilitate clients to use telephone and web counselling services. This chapter investigates areas of social psychology such as help-seeking behaviours, communication dynamics, and therapeutic elements that facilitate and possibly preempt clients to use these services.

Discussions are raised concerning the effectiveness of telepsychology and the emerging differentiation between telehealth and telepsychology services.

Introduction

In the past two decades, there has been an enormous growth in the call centre and computer IT industry and as a result, services provided by psychologists, psychiatrists, social workers and counsellors are now offered in these environments. The term commonly used is Telehealth or e-health. Telehealth or e-health are terms used to describe any health related service that is provided remotely via technology-assisted media such as the telephone, computer, or Internet. Telepsychology is one form of Telehealth service that is related to remote psychological services. Other terms also commonly used are e-psychology, e-counselling, web-counselling, telephone counselling or online counselling. All of these terms reflect the nature of remote psychological services.

There are also various descriptions used to describe people who utilise Telepsychology services. I have used the term client as one that will remain consistent in this chapter. I acknowledge that other terms are also commonly used including patients, callers, consumers, help-seekers and end-users.

What is Telepsychology?

One could be mistaken for assuming that Telepsychology and Helplines provide the same service when actually, differences in technology and case management practices are emerging that may create distinct differences in the definition of these services. Presently, the difference between Telepsychology and Helplines lies in the case management practices of clients. In general terms, Helplines are community services

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where people call and talk to someone while remaining anonymous. In the Helpline environment the client chooses the conditions of interaction such as the time and length of the call. Helplines usually rely on the client to end the call in order incur little to no cost to the client. Volunteers with little formal qualifications commonly staff Helplines and the service is available to clients at extended hours, often 24 hours a day. Telepsychology on the other hand, is a detailed sharing of information between the psychologist and the client. The client provides personal details, payment, and how the sessions are to be structured. The counsellor can make appointments and transfer client information to another counsellor when pertinent to the therapeutic dynamic. Information relating to the client can be effectively followed up and continuity of care maintained. The counsellor provides services over the telephone and/or computer similarly to the level of service provided in face-to-face consultation.

Hill (1997) defines Telehealth as services that involve the delivery of health related activities (e.g., health service, education or information) over distance, using computers and telecommunications.

Williams (2000) describes Telepsychology as healthcare professionals (psychologists) interacting with their clients using real time interactive communication media. Included in this definition are telephone (audio only interaction), Internet chat rooms, video and audio transmission via the Internet, or closed circuit televisions. Other types of technology assisted media such as e-mail or faxes are not truly interactive or in real-time, thus can somewhat limit fluency and immediacy of the communication process and cannot truly be defined as Telepsychology services. (Williams, 2000)

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Coman, Burrows and Evans (2001) categorise Telehealth services by the type of interaction and the longevity of the interaction. That is, the type of interaction is either recorded or live and the longevity of interaction is either ongoing or crisis. It is reasonable to assume that because of the evolving nature of technology, future Telepsychology services are likely to vary greatly and may not suitably fall to any one of the abovementioned categories.

Types of Telehealth services in Australia

In Australia, a geographically vast country, many welfare and health services rely heavily on technology, such as radio, Internet and mobile phones. In recent years Telehealth has become an increasingly important service to disadvantaged groups and people in remote and rural communities. It is estimated that the number of Telehealth services increased approximately 20 - 30% a year since 1996 (Campos, 2001).

Telepsychology specialties are now being recognised as legitimate modes of service by The Royal Australian and New Zealand College of Psychiatrists (2002), The Australian National Telehealth Committee (1998) and The Commonwealth of Australia Department of Health and Aged Care (2000).

Various practices of Telehealth have emerged in Australia, including private practitioners offering services over the telephone and Internet. This involves counselling or coaching clients via technology-assisted modes such as e-mail and the telephone. Clients consult with Psychologists about relationships, stress, self-esteem, and family issues all via the telephone and/ or computer. Psychologists also provide supervision to

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trainee psychologists via telephone and e-mail as effective methods of liaising with students (Campos 2001; Coman, Burrows, & Evans, 2001).

Health Insurance companies have developed Telepsychology practices to effectively case manage their clients. The term currently used is *managed care*. The health insurance company provides details of their membership to a telephone psychologist and members make direct contact to discuss the issues. The service is free to the members (clients) and the psychologist provides services over the phone/ Internet and refers or consults with other health professionals for better case management and treatment (Campos, 2001; Coman, Burrows & Evans, 2001).

Pharmaceutical companies are also providing counselling and case management services for clients using new pharmaceutical products. The company provides a support hotline for patients and their families pertaining to specific medications, to provide information and counselling. The rationale for this service is that clients are better informed about their condition and treatment, therefore having a greater chance adhering to the prescribed medication (Campos, 2001; Coman, Burrows & Evans, 2001).

There is also the emergence of the 1900 Telepsychology services. These are pay as you talk services, often charged to the client at a rate per minute. The client talks to a psychologist according to their needs. The issues are addressed during the call and a referral is made, if necessary. The client is assured that the person on the phone is a qualified and registered psychologist and may be available at extended hours (Campos 2001; Coman, Burrows & Evans, 2001).

Example of a Telehealth client

With the advent of different modes and technologies, particularly relating to Telepsychology, there are considerable changes to how clients access health or mental health services in contrast to face-to-face services. Take this scenario for example.

A working mother of two young children has recently separated from her husband and is presently very depressed. She is reluctant to discuss the issues with her family as her relationship with them is poor. She perceives that talking to family members may create more stress from the assumed negative judgments made by people closest to her.

She is in a very depressed state one night after receiving an email from her separated husband. With her children asleep, she logs on to the Internet to a self-help site for depression and completes a 20-item depression checklist. Within a few moments she receives an e-mail suggesting that her levels of depression are quite severe and she is provided with a phone number of a 24-hour counselling service to talk to a qualified counsellor. She is also invited to join an online self-help chat room. She makes the phone call and whilst discussing concerns with the telephone counsellor, she is also advised to pursue other services and is given contact details and information for a local psychologist or general practitioner and a referral to legal support services for further assistance. At the conclusion of the interaction the mother of two found the discussion very helpful.

A few days have passed and she realizes that she will need help in overcoming her depression. She contemplates how she may seek help whilst

managing the household and the busy life of two young children and still maintain this issue private from her family and husband. She is concerned about any implications this may have if she was to seek a divorce from her husband.

Due to the nature of her state, she chooses to confide and discuss her problems with the telephone counsellor, as she believes the service is useful, affordable, convenient, and confidential. Furthermore she has been able to develop a good rapport and develops structured counselling sessions with the Telephone Counsellor.

As illustrated by this case scenario, there are numerous reasons or motives attributed to the woman seeking help in this manner. The most obvious reason may be the ease of access, having no time restraints and little to no cost. Her distressed state and her present situation may also have facilitated her seeking help via the Internet, including time restrictions with children, perceived lack of understanding from the people around her (family members) and possible implications of her distressed state. This woman may have also continued with the telephone counsellor as a result of the therapeutic benefit she has received. One could argue that the quality of the counselling she received may lessen her distressed state.

Key Issues in the area of Telepsychology

With advances in technology and the cost of such equipment being low, it has meant that compared to face-to-face services, Telepsychology can provide services to

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more clients across larger distances at relative low costs. Furthermore, technology assisted media are presently evolving and becoming more sophisticated and complex, allowing greater fluency, flexibility and choices for clients. Clients can now choose how, when, and what services will be utilised. This raises many issues in evaluating services, as clear measurable outcomes are difficult to establish in this environment.

Recent literature on this field raises scepticism about the effectiveness of Telepsychology services to clients. Nickelson (1998) argues that considerable barriers face Telepsychology services, including the sustainability and viability of these services over the long term as information technology becomes more interactive and costly to maintain up to date. The funding and reimbursement of these services are also becoming increasingly more cost competitive, challenging the quality of these services.

Nickelson (1998) distinguishes several factors that need to be investigated when studying the effectiveness of Telepsychology services. Firstly, there are many variations of counselling including face-to-face, family therapy, group counselling, and support groups. Each of these variations brings further dynamics to the counselling process and changes the dynamics of physical presence to the counselling relationship. Telepsychology will inevitably bring further dynamics to the counselling relationship and change different aspects of the counselling process, most notably the removal of a physical presence.

In order to understand the effectiveness of Telepsychology services we would need to address several psychosocial factors, including why people seek this mode of help. The uptake of Telepsychology services by the community is increasing and may

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indicate that these services cater to specific clientele or client states that may be better catered for, or treated, in a Telepsychology environment (Griffiths & Cooper, 2003). Recent studies suggest Telepsychology services may provide considerable therapeutic benefit for clients, when compared to traditional face-to-face services (Rabasca, 1998).

Research literature in this area is yet to investigate the therapeutic benefit of Telepsychology services and the processes of interaction taking place. Research has predominantly focused on the therapeutic benefits of face-to-face services. Furthermore research has failed to address the variations of the presenting problems that would facilitate or hinder clients seeking help via Telepsychology services. An obvious question to ask is why do clients engage in Telepsychology services rather than seek traditional types of counselling. To answer this I will review the literature on help seeking.

Help seeking

Help seeking is often associated with an individual's current situation requiring some form of solution, for example a tourist requiring directions to a specific destination. In the area of health and welfare there are various reasons why people seek help for issues that are likely to have some social implications and may involve sensitive information. Seeking help about a health related matter will involve a more delicate and careful decision making process by the client than simply asking for directions (Gross & McMullen, 1983). Seeking out health related help is often an emotionally costly exercise for an individual and is often a second choice for people. People will predominantly want to seek help by themselves, for themselves without any social implications.

Williams and Williams (1983) report findings from the help-giving literature are equally applicable to help-seeking. In their paper, they state that the same factors associated with the social impact of bystanders can prevent people from seeking help (Latané, 1981; Williams & Williams, 1983). In help-giving, the presence of many other bystanders inhibits the likelihood of the individual providing help. In help-seeking, the presence of many to hear the help-request increases embarrassment and inhibits help-seeking. In help-giving, people are more likely to transfer their responsibility to higher status individuals. In help-seeking, embarrassment increases when one must ask a higher status person, thus inhibiting help-seeking. In help giving, the distance between the other bystanders and the individual also affects inhibitions; the closer the others are, the more they inhibit responding. In help-seeking, it is more embarrassing to ask people in one's own physical presence than to ask people who are further away, say by telephone (Williams & Williams, 1983). These propositions were supported in their laboratory work on help-seeking, but are also supported by studies using self-report measures that conclude that individuals seek help from informal help giving sources, such as family or friends, and reduce the contact with help giving individuals based on proximity and number of face-to-face contacts.

The help seeking literature outlines many social and psychological factors that may inhibit or facilitate seeking help. The predominant factors include, cost and accessibility, and perceived social implications (McKinlay, 1975; McMullen & Gross, 1983). Other factors include, cultural influences, family sensitivity and emotional competence (Bhatt, 2002; Ciarrochi & Deanne, 2001). Studies also suggest that sex roles and sex differences are often a common factor associated with help seeking among

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specific population groups (McMullen & Gross, 1983). Further factors that influence help seeking include reluctance to self-disclose and potential for embarrassment, personal characteristics such as perceived inadequacies, desire to self-help, perceived social support and perceived levels of distress (DePaulo, 1982; Mays, Beckham, Oranchak, Harper, 1994; Merton, Merton, & Barber, 1983; Rosen, 1983).

DePaulo (1982) indicates that seeking health-related help is often not the first choice for help seekers. People often in need, do not ask for help at all and will often prefer the type of help that they can administer themselves. Even when help is solicited from other persons, it is often disguised as something other than a direct request. This may reflect the reasons why Telepsychology services have become so popular. The ease of access, convenience, and the perceived control of accessing services when people require help, may well be one step closer to finding help themselves, rather than relying on other people. The immediacy of access and the relative unobstructed manner to which help is achieved may be its attractiveness.

With the advent of Telepsychology, further factors may need to be taken into account as to the type of help clients seek. Presently, the help seeking literature illustrates that accessibility and low cost are the main reasons for the attraction to Telepsychology services. However the literature fails to address how the actual technology media may be a contributing factor to its attractiveness. It is worthwhile to ask the questions of how communication between people changes in a technology assisted environment in an attempt to address significant factors to the helping relationship.

Social Research and Communication Process

Latané (1981) defines social impact as a “variety of changes in physiological states and subjective feelings, motives and emotions, cognitions and beliefs, values and behaviour, that occur in an individual, human or animal, *as a result of real, implied or imagined* presence or actions by other individuals” (p. 343).

Many researchers would deem physical presence as an important part of the communication process. Bolton’s (1986) influential book on people skills describes a positive relationship between physical proximity and influence. Bolton argues that proximity in terms of physical closeness increases the likelihood of future communication and interaction. The study by Pallack (1983) demonstrates that persons receiving a message tend to be influenced by visual cues that allow the recipient to form a better opinion about how to receive and respond to messages and engage in the communication process.

Social psychological research has indicated that technology-assisted media may make some differences to human communication and relationships, primarily because of the removal of face-to-face contact or physical presence. It is understandable that technology-assisted media will inevitably change any cues associated with physical presence. However, we need to understand that face-to-face communication is one way of communicating, there are other forms of communicating including, symbolic or written (visual) and speech or noises, (auditory). It can be further argued that effective communication may include a number of forms of communicating with or without physical presence (Griffith & Cooper, 2003).

A study by Moon (1999) found that technology assisted communication can influence the receiver's view of the information presented and the sender can be more persuasive than face-to-face communication as cues and contexts can be omitted and manipulated. Moon's study can imply that the social impact theory of Latané (1981) can be similarly applicable in a group using a technology-assisted environment.

Moon's study reflects on the ability of a technology assisted environment to create real, implied or imagined presence. Moon (1998) found that if the message can portray to the receiver that the sender is in close physical proximity, such as an e-mail from the next room rather than across the world, this will have a greater chance of influencing the group and receivers acknowledging the message. Moon's study asserts the notion of social impact and questions the definitions of presence and closeness as being relevant in a technology assisted environment. A technology-assisted environment can portray presence although without being physically present. Furthermore, Moon's finding asserts that there are few differences between the power influence and perceptions of communication in a technology-assisted environment when compared to face-to-face communication.

A study by McLeod, Baron, Marti and Yoon (1997) raised several questions relating to the comparison of face-to-face and computer mediated group discussion. In their study, they argued that computer assisted communication can increase the quality of group decision by facilitating expression and increase the influence of minority opinions. McLeod, Baron, Marti and Yoon (1997) states that computer assisted communication is far more practical, convenient and less costly for an individual, which can facilitate the

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communication process. They hypothesize that computer facilitated communication may change group dynamics so that minority group members are able to have more power to influence and increase the quality of group decisions. Their findings were inconclusive and highlighted aspects of social impact of a technology assisted environment as similar to a face-to-face environment. McLeod, Baron, Marti and Yoon (1997) found that computer-assisted communication was more practical allowing easier access and facilitating the expression of individuals of minority groups. However, their findings also indicate that the power to influence remained unchanged when compared to groups of face-to-face communication.

These studies illustrate that many aspects of social impact remains constant in a computer-assisted environment when compared to face-to-face communication. The implications to Telepsychology are that there may be minimal sociological differences to the process of communication between clients using Telepsychology services and face-to-face services.

Other studies show some differences between computer environment and face-to-face communication process including context of relationship (Nass, Moon, Fogg, Reeves & Dryer, 1995) and decision making processes (Jessup, Connolly & Galegher, 1990). However, one must keep in mind that there are limitations to the conclusions made by all of these studies. Many of these studies are conducted in a group context whereby the communication process is shared and the dialogue is between several individuals. We can assume that group contexts will create systemic pressures, predominantly influencing how communication is generated and received by individuals. In comparison to Telepsychology services, communication occurs between two individuals and the

dialogue is direct, thus such findings may not be applicable to one-on-one communication. Secondly, the studies primarily focus on computer mediums in comparison to face-to face communication. They fail to recognise and compare other technologies, such as the telephone, which one would suspect as having further dynamic differences (Rosenfield, 2002).

Lastly, many of the studies make conclusions based on quantitative measures with little reference to subjective qualitative measures. Particularly in the area of Telepsychology or counselling, measures of therapeutic benefit are based on subjective interpretation (Egan, 1994). These studies do not address or report individual differences relevant to the communication process. Individual differences in the macro level of communication such as transference, judgments, assumptions, attitudes, feelings, emotions, listening skills and trust are important elements in the counselling process.

Counselling and Therapeutic Communication

Watchell (1993) describes therapeutic communication as predominantly having two levels of meaning. One level of meaning entails the focal message, which is the message being conveyed when communicating about experiences, descriptions and understandings using the client and therapist's language. The other level is the meta-messages. This refers to the underlying interpretation, conveying attitude, emotions and interpretations. Watchell argues that it is meta-messages that have the greatest potential for therapeutic transformation (or therapeutic failure) and it is often meta-messages that frequently go unnoticed or unexamined.

Using Watchell's (1993) description, it is a fair assumption to describe the communication process in counselling as complex. Research has failed to accurately measure and quantify subjective concepts such as transference, empathy and other therapeutic concepts. The overall dynamic nature of the counselling process produces too many variables that may identify specific elements deemed effective.

Bobevski and McLennan (1998) argue that counselling research fails to identify elements of the counselling process with measurable outcomes and call for new conceptual frameworks. They suggest a model of dynamic decision performance because counselling can be conceptualized as a complex and dynamic, decision-making process. This model would allow a more interpretive and qualitative analysis of the counselling interaction.

It is reasonable to state that counselling can occur in a technology-assisted environment. Rogers' (1957) significant paper on necessary and sufficient conditions for therapeutic personality changes lists many qualities required for the counselling process to be deemed therapeutic including ability to; establish contact, establish a relationship, communicate accurately and to demonstrate an understanding and empathic response. Furthermore Egan's (1994) skilled helper model provides a framework for interviewing and questioning that is directed at allowing clients to think about their situation and construct new meaning and understanding. The focus of this model is to assist and challenge client's thought and beliefs. In Rogers and Egan's counselling models, there is no specific mention that effectiveness of counselling is based on physical presence. It seems plausible that the qualities outlined by Rogers and Egan may also be equally

applicable to any counselling process whether it be technology assisted or in a face-to-face environment.

Is Telepsychology Effective?

To study the effectiveness of counselling in a Telepsychology environment produces many research challenges. Evaluating any form of counselling is difficult, yet Telepsychology offers further difficulties. One of the attractions of Telepsychology is the ease of access and anonymity it offers. Identification of clients and possible follow-up or repercussions of the contact are often inappropriate as sessions are often one-off, making follow-up difficult.

The literature on the effectiveness of Telepsychology is very recent and little research has been able to indicate any conclusive statements in the area. The closest comparison to Telepsychology where there is a body of literature that is able to provide further clues to the effectiveness of Telepsychology is the area of Helpline work and telephone counselling.

Hornblow (1986) states numerous approaches have been used to evaluate telephone counselling, all having the limitation of a methodological or practical nature. Major methodological difficulties arises from the fact that generally it is not possible in this research context to use before and after measures, control groups and standardised psychological tests or clinician ratings. Similarly, client outcomes cannot be assessed solely in terms of a psychiatric diagnostic framework given the wide range of presenting problems. It seems that the difficulties arising in evaluating and researching telephone counselling is similar to difficulties arising in any counselling setting. One of the research

dilemmas in telephone counselling is the large number of clients producing large variations in the data. Another dilemma is the variation of how clients use the services. Sessions are commonly unstructured and counsellor follow-up is minimal. In a face-to-face environment there are several points of contact and agreement between the client and counsellor that allows sessions to be structured. The face-to-face environment creates some constant variables for research.

Telephone Counselling Research

A common method used in assessing the effectiveness of telephone counselling services is client follow-up. This involves the caller answering interview questions either immediately after the counselling session or via follow-up contact. Using a structured interview, clients are asked to rate aspects of the session on a variety of scales. Young (1989) states some researchers see the clients as having the best insight into whether they have been helped or not. However, other researchers see this as more problematic with the possibility of sample bias, ethical issues (such as informed consent), and difficulties of measuring outcomes and defining effectiveness.

In a study to examine helpful behaviours in a crisis call centre, Young (1989) attempted to identify factors that are effective in telephone counselling, Young examined the results of interviews with 80 callers immediately after their calls to a 24-hour crisis line. Young found that the most helpful behaviours mentioned were listening and feedback, understanding and caring, non-judgmental support, appropriate climate and directiveness. Young (1989) describes directiveness as when the counsellor is able to

guide and direct the therapeutic content of the interaction. Young states that directiveness is a predictor in behaviour changes of the clients, more so than non-judgmental support alone.

Hornblow and Sloane (1980) conducted a study over an eight week period at Christchurch Lifeline. Clients were re-contacted within 24 hours to complete a short questionnaire regarding the therapeutic benefit and effectiveness of the counsellor and intervention by determining if the counsellor had correctly identified the clients' feelings and problems. The results of 214 clients indicated that counsellors correctly identified one of the clients' two strongest feelings in 63% of calls. Counsellors and clients agreed on the ranking of clients' problems in 53% of calls. Of calls in which some specific action was agreed on, 68% of respondents had indicated they had done this. Counsellors' evaluation of their own understanding and helpfulness was unrelated to that of the client ratings of counsellor effectiveness. This study indicates that key elements of counselling, such as identifying feelings and developing a course of action, appear to closely match the clients' perception of therapeutic benefit. This finding would indicate that elements of therapeutic communication are strong between clients and counsellor in this environment.

Another common methodology in determining effectiveness is role-plays. Role-plays use coached clients to rate counsellors on a variety of scales to assess what was positive about the counselling session. Sometimes the counsellor is not informed that the role-playing client is part of an experiment. For example, in a study (Davies, 1982) of British helplines used a role-playing client to call ten services and found a range of differences in quality, suggesting the need for a higher level of basic training.

Bobevski, Holgate, and McLennan (1997) also used scripted scenarios with role-playing clients to assess subjectively the perceived helpfulness of counsellor behaviour. Two clients were used, one as a warm up, the second for the data. One client is used to standardise the experimental procedure however this immediately raises the issue of generalisation. The results suggest that the counsellors judged to be more helpful were more verbally active, those taking the initiative in structuring the session, and those who systemically explored all aspects of the situation while addressing the practical and emotional needs of the client. Additionally, it was found the most effective counsellors were able to help the client change their perspective on the situation. In comparison to Slegman's (1997) research of face-to-face counselling effectiveness, Bobevski, Holgate and McLennan (1997) findings have indicated similar findings and research dilemmas to face-to-face counselling research. These similarities would indicate that counselling effectiveness and research limitations are also applicable to telephone counselling services.

Stein and Lambert (1984) used counsellor self-evaluations as another approach. The problem with this approach is the subjective nature of the feedback, often focusing on an individual's counselling skills and the relative optimism bias from individual counsellors. Although it would be of interest to match counsellor and client feedback on sessions, the research in this area failed to provide any real quantitative measures to be meaningful or conclusive. They also focused on the take up rate of referrals provided to clients when consulting a telephone counselling service. Take up rates on referrals would seem to offer a neat, relatively easy measure of effectiveness as an indication that the client has taken the next step after the intervention. However it could be argued that

referral take up is not necessarily a result of a counsellor's skill. There were no significant differences on client satisfaction between those who followed through on referrals and those who did not. Rosenbaum and Clahoun (1977) argues that this type of research assumes non-take up of referrals as failures, when clients may have been helped by the session.

Stein and Lambert (1984) research indicates similar findings to research on face-to-face counselling as Talmon (1990) states that a significant percentage of face-to-face clients are helped by a single session and will often not require any follow up. These results may imply that evaluating effectiveness of counselling has similar research dilemmas in face-to-face as well as Telepsychology services.

Echterling and Hatought (1989) looked at the different phases of crisis calls. Fifty-nine calls were monitored by independent observers and it was found that effective intervention could be hindered by social conversation that went beyond the minimum necessary to establish good rapport. They also found that assessment is best carried out in the first two thirds of the call, working with feelings is the most successful during the middle phase of the session, problem solving and strategies for action are best left for the final part of the call. These stages are quite compatible with Egan's (1994) skilled helper model.

Morgan and King (1977) monitored calls to a helpline service over a 22 month period. One of their findings is that men made more prank and obscene calls than women. While other significant differences were found, the data was too limited to make other generalisations. Another study at a Child, Adolescent and Family Health Unit in South Australia assessed client satisfaction using solution focused counselling techniques over

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the telephone (Hetzl, Wilkins, Carrig, Thomas, & Senior, 1993). Of the 40 respondents, 80% rated counselling as very useful, with only one of the 40 reporting that counselling was not helpful. These findings are similar to results found in face-to-face counselling (Wampold 2001).

The Preventative Value of Telephone Counselling

Hornblow (1986) in asking whether telephone counselling has preventative value defines three tiers of prevention. Primary prevention decreases in the incidence of a disorder, be it suicide or mental illness. Secondary prevention attempts to diagnose and treat earlier and to reduce the length and severity of disorders. Tertiary prevention is used to reduce impairment and handicaps associated with a disorder. Hornblow found that for telephone counselling, there is no evidence for great success in primary prevention, while there is promising evidence for secondary and tertiary prevention.

Generally, certain factors contribute to the effectiveness of counselling including providing preventative measures. Telephone counselling provides an environment where clients can be listened to, be provided with information and referrals can assist clients in alleviating some of their distress. These are factors that can contribute to effectiveness. It is accepted that counselling is an effective therapeutic interventions for mental health issues (Egan 1984) and the same basic skills are being used for Telepsychology (Hambly 1984; Rosenfield 2002). It is reasonable to suggest that Telepsychology is effective at least in terms of secondary and tertiary preventions as outlined by Hornblow (1986).

The literature on telephone counselling indicates that clients who seek help using these modes generally seem satisfied with the services that they receive. Capner (1999)

reports that technology assisted counselling appears to be growing at an exponential rate. Customer satisfaction also appears to be high with one study (Gingerrich, Gurney, & Wirtz 1988) reporting that up to 90% of callers feel satisfied with telephone counselling while about half felt their problem was less severe at follow-up. Young (1989) in a survey of the literature found that overall, about two-thirds of respondents felt that they had been helped by counselling via the telephone. These results are similar to results found by Wampold (2001) regarding face-to-face counselling. Wampold reports that overall about two-thirds of clients are satisfied with the face-to-face counselling they received. These results remain consistent even though counsellors used different therapeutic styles.

We can assume that certain clientele will inevitably seek face-to-face services because of the nature of their presenting problem. Some differences have emerged between telephone counselling and face-to-face counselling services. Morgan and King (1977) study highlighted possible differences in clientele, such as *regular callers* where clients regularly use the service for up to several years on a frequent basis and *sex callers* where predominantly male clients use the service to listen to the counsellor's voice for sexual gratification. In a face-to-face context clients presenting with similar behaviours and issues are unlikely.

It can be said that clients attracted to Telepsychology services will seek these services because of the nature of the presenting problems. An area that has been overlooked in the literature is identifying with which presenting problems Telepsychology clients present.

Presenting problems

Hornblow (1986) and Rosenfield (1997) stipulate that the clientele attracted to Telepsychology services present with different problems and are often a different clientele to the mainstream face-to-face counselling population. Clients who predominantly utilise telephone and Internet counselling services will have different reasons for utilising such services. They will often present with a variety of problems some of which are more appropriately dealt with via the telephone or technology assisted mediums due to the brief interventions required, timing of events and accessibility of callers to a variety of services and professionals. Examples of clients with specific presenting problems, benefiting from Telepsychology services include clients suffering with severe agoraphobia (McNamee, O'Sullivan, Lelliott, & Marks, 1989) and clients with extremely poor social skills and social phobias (Rosenfield 1997).

Hambly (1984) has indicated that the predominant issue of confidentiality is a major concern for people who use Telepsychology services. Hambly states that the nature of the presenting problems can often be distressing, embarrassing and personal. The ability of the client to feel secure in divulging personal information needs to be addressed so that the continuity and therapeutic intervention can be established and maintained. Hambly argues that Telepsychology, particularly telephone counselling offers such an environment.

Skardervd (2003) suggests that anonymity can increase the likelihood of participation and reduce the inhibition associated with participation in help seeking behaviours including professional counselling. Meissner (2002) elaborates that anonymity offers some protection for clients to express their thoughts and opinions with

little repercussion. This allows clients to explore feelings and attitudes with little fear of judgment. Clients are able to share personal information that may have never been expressed which can sometimes be of therapeutic benefit. However there are also disadvantages to counselling anonymous clients as there is an increase in pranks, obscenities, and manipulation by the clients making it difficult for counsellors to provide counselling effectively.

Further advantages to Telepsychology include the ability for clients to access services otherwise inaccessible. Rosenfield (2002) states that technology assisted media increase the availability of services, as it is often more economical for clients to attend and far more practical in accessing exclusive or unique services. Examples of clientele, who may benefit from technology-assisted media, include people with physical disabilities, the elderly, people from rural communities or geographical restrictions and those with specific presenting problems such as suffering with severe agoraphobia (Capner, 1999; DeSalvo 1988; Evans, Smith, Werkhoven, Fox, & Pritzl, 1986; McNamee, O'Sullivan, Lelliott, & Marks, 1989; Shepherd, 1987).

Another study (Coman, Burrows, & Evans, 2001) reports that another important factor in the counselling process is the relative severity of the problem as defined or judged by the client. Fisher (1973) states that issues presenting with life threatening possibilities would be deemed more important than other issues that may not be life threatening. Fisher argues that the level of severity, most likely translates to the level of urgency by a client at a particular time. This urgency would prompt clients to seek

assistance quickly and that technology assisted media may provide the immediacy required.

From the literature regarding presenting problems, there appears to be two main factors associated with the use of Telepsychology services. The first is confidentiality of the client, giving clients the ability to remain completely anonymous. Secondly is the accessibility of the service for clients to access services after hours and when symptoms of distress are occurring. Telepsychology appears to offer an environment that caters for these two factors.

Summary

The accessibility of Telepsychology services to the public is an enormous advantage over other services. Information can be quickly passed to the client and the counsellor has direct contact with the client without talking first to a receptionist, nurse or medical officer prior to appointment. Recent case studies from the Telephone Helpline Association (1999) have indicated that a small number of clients may not require face-to-face consultation after accessing Telepsychology services.

Presently, the research is unable to provide any conclusive statements on the effectiveness and quality of Telepsychology services in comparison to face-to-face services. It could be assumed that such comparison may not be appropriate given that Telepsychology services create a different environment for counselling than face-to-face. However there appears to be some research indicating that such differences are minimal. Due to the lack of reliable and valid evaluation tools developed for Telepsychology,

comparative research in evaluating the effectiveness and quality of these services are limited.

From this chapter we can make some general conclusion about the aspects of Telepsychology and the important factors associated with clients seeking help within this medium. Firstly, Telepsychology is changing and as technology advances, services become more interactive and include more visual and auditory cues. This will enhance the communication and counselling process.

Secondly from the help seeking literature, it indicates that clients are more likely to seek help for themselves before seeking help externally. There are various social implications as to why clients generally do this, however Telepsychology services may provide an environment whereby specific social factors are diminished, allowing an emotional involvement by the client and less inhibition. This environment facilitates participation by the clients in the help seeking process. The literature on technology assisted communication and social impact also supports this view.

Thirdly, technology assisted communication changes the dynamics of the interaction and communication process. However the literature indicates that these changes may have minimal effect on the quality of the communication. The sociological implications of technology assisted communication appear to be similar to face-to-face communication. Social impact and therapeutic concepts are observed in this environment and communicated via these mediums although some changes and adaptations are required.

Fourthly, methods used to evaluate Telepsychology are limited. Research in the area of telephone counselling has been able to indicate that Telepsychology services may

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provide therapeutic benefit for certain clientele, specifically those from rural and remote areas and marginalised or minority groups. Factors that have been identified as being important for clients to utilise Telepsychology are confidentiality and anonymity as well as severity of presenting problems and accessibility of services associated with severity. Presently research has not attempted to associate which problems present with these two factors needing to be addressed first and foremost, so that clients seek Telepsychology services. It is hypothesized that if these two factors are addressed, counselling in a Telepsychology environment may be more appropriate and effective than face-to-face services.

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Pro-anorexia and the Internet: A Tangled Web of Representation and (Dis)Embodiment

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Abstract

This paper is an introductory discussion of the pro-anorexia movement and some of the questions it raises about representation. It links the emergence of pro-anorexia to a growing area of public debate about anorexia's relationship to the media and advertising industries. It argues that pro-anorexia exemplifies a complex and contradictory set of meanings about the cultural and subjective management of the female body in which notions of individual agency and empowerment are confused with those of social oppression and control. By addressing some of the problems raised by the use of fashion and advertising imagery on the websites ('thinspiration') it suggests that pro-anorexia participates in the same structures of power which feminists for a number of years have identified as sources of women's oppression and unhappiness. By interpreting pro-anorexia as a symptom of overwhelming cultural constraints on women's bodies, it raises a concern about the use of the internet as a technology which encourages 'disembodied' modes of communication. It suggests that if pro-anorexia can be interpreted as a symptomatic expression of cultural constraints we need to take care in considering the ramifications of censorship or enforcing further constraints upon its methods of representation.

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This paper is an introductory discussion of the pro-anorexia movement and some of the questions it raises about representation. I approach anorexia as a historically and culturally bound condition (DiNicola, 1990) and suggest that the promotional stance of the pro-anorexia movement has produced a range of tensions that disturb perceptions of anorexia as an illness and problematise its representation in the public domain. Since their appearance in the late 1990s, pro-anorexia websites have inspired a discourse of outrage and moral panic in the media, not only because they promote a favourable stance toward anorexia but because they challenge ideas about mental illness, aligning it more with the notion of volition than with involuntary suffering and pathology. Through their engagement with a range of discourses on body-management practices and the right-to-representation, the websites actively participate in public debates about the meaning of anorexia. They ask us to rethink the question of *who* controls its representation – clinicians, the media or the sufferers themselves? Despite the movement's active engagement with these ideas however, I argue that its methods of promotion – particularly through the use of the internet, the discourses it adopts and the promotion of images of extreme slenderness – often contradict the rhetoric of rights at the forefront of the movement. Pro-anorexia may be approached as a symptom of a culture that encourages the pursuit of unattainable forms of slenderness amongst young women and a discourse in which the immaterial world of representations is constructed as more

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seductive than the material. I suggest that whilst the pro-anorexia movement's claims to the right-to-representation ought to be respected, we must retain our focus on the bodies behind these claims as the dangerously contested sites of a very problematic femininity.

By way of putting some of the issues concerning representation into a historical perspective, an outline of what pro-anorexia websites are and where they have come from is imperative. 'Pro-anorexia' is an online community of anorectics consisting of a number of chatrooms and personal webpages. These sites serve a range of purposes: they provide support for anorectics who are not ready to seek help for recovery or engage in treatment, they offer information and advice on how to achieve and maintain anorexia often under the headings of 'tips and tricks' (these include advice on things from dieting, diet pills and exercise, to vomiting, ways of disguising symptoms and ways of thinking, or 'triggers' that help maintain anorexia); they also provide access to a range of photographs of slender, sometimes clinically anorexic women and celebrities used to inspire starvation titled 'thinspiration'. As a social movement, pro-anorexia employs a range of inter-textual strategies of narration to express its political concerns – from personalised webpages and blogs, to petitions, photographic galleries and interactive chatroom discussion sites. In these ways, pro-anorexia occupies a complex boundary between commentary and practice, it is both a meta-discourse and a lived anorexia.

In the early stages of the movement, the focus of the web-sites was on providing a space in which the experience of anorexia could be shared and openly discussed amongst sufferers. Some sites such as 'Makaylas Healing Place' are still committed to providing this kind of space. The sites do not directly encourage people to become anorexic, rather

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they are intended as a sanctuary for those already suffering the illness, a place where they can share their thoughts on anorexia away from the pressure of family or friends who may encourage or enforce recovery. Although the cultural meaning of anorexia has been the subject of much debate amongst feminists in recent decades (Bordo, 1993; Malson, 1998; McSween, 1993; Probyn, 1988), pro-anorexia is the first example of these debates extending to and being expressed collectively by sufferers themselves. In contrast to the 'recovery' story familiar to us through women's magazines (Cassimatis, 2000; Shepherd, 1993) or autobiographical accounts of anorexia such as those by Sheila McLeod (1981) or Kim Chernin (1981), pro-anorexia websites are the first example of anorectics discussing the illness in its immediacy without the benefits of hindsight or reflective analysis. Anorexia is discussed on the sites through discourses ranging from gothic or grunge narratives of death or 'wasted-ness' ('Emaciate Me' / 'I'm so Dead'), the quasi-religious narratives of eternal life ('Egyptian Ana's Temple of Life') or the more popular narratives of purity, perfectionism and self-control ('Perfect Illusion' / 'Ana's Angels'). Through such discursive mechanisms, anorexia is often depicted on the websites as a lifestyle that can be attained by adhering to certain codes of representation. The meaning of anorexia thus often exceeds the boundaries of clinical discourse that confine it to definitions of 'illness' and enters a much broader discursive field where it is problematically established as something both desirable and powerful. In this respect the internet not only facilitates group discussions about anorexia but through the immediacy of textual exchange, promotes a complex inter-textual language through which anorexic subjectivity is expressed and mediated.

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As the media's awareness of these sites has grown, pro-anorexia has become the subject of intense public scrutiny and its function increasingly entangled in moral and political debates about the right to representation, free speech, and internet usage. As part of a general backlash against the movement, some internet servers such as Yahoo! have chosen to ban or block the sites, and groups such as S.C.a.R.E.D (Support, Concern and Resources for Eating Disorders) and S.P.A.P. (Stopping Pro-Anorexia Promotion) were developed to persuade servers to shut them down (Pollack, 2003). Essentially, pro-anorexia sites have been seen, as idealised images of slenderness have themselves been seen for a number of years, as a danger to vulnerable young women and a threat to public health. As a result of this scrutiny, some sites now display warnings about their pro-anorexia content and provide forums to discuss issues related to recovery and treatment. Other sites even provide links to recovery sites or further information about anorexia, bulimia and other eating-related disorders.

As public concern about the sites developed, so too did the vehemence with which pro-anorexia asserted its political and personal messages. The content of the sites grew from subjective accounts of anorexia (in the daily chatroom or diary formats), to more political commentaries about the rights of anorectics to represent themselves and their rights to use the internet for doing so. This culminated in the appearance of menu headings such as 'mission statements' and 'background philosophy', which are expressed in militant language such as 'this is not a place for the faint-hearted, weak, hysterical, or those wanting to be rescued...this is a place for the elite' ('Ana's Underground Grotto') or in others verging on the religious language of eternal life – 'this site is for us rexies,

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who are proud of our accomplishments, and the accomplishments that lie ahead, we will never die' ('Rexia World'). This politicised rhetoric often sits uneasily alongside the more painful aspects of anorexia expressed in the autobiographical chatroom narratives, (www.livejournal.com) where feelings of frustration, anger and fear are often directed at the 'goddess' or 'mistress' ANA (or MIA in the case of pro-bulimia sites) and the experience of being anorexic is associated with personal trauma or tragedy.

One of the central difficulties of analysing pro-anorexia discourse is that, like anorexia itself, it is contradictory. Some sites claim anorexia is not an illness but a lifestyle choice ('Bluedragonfly'), whilst others identify it as an illness and derive a sense of pride and identity from it ('Cerulean Butterfly' / 'Starving for Perfection'). Some sites present anorexia as a pro-active method of achieving power and happiness, and others present it as a normalised and realistic attempt at achieving 'society's image of beauty that is forced upon us' (gopetition.com). In general, being 'pro-anorexic' involves seeing anorexia as a form of self-control, not self-destruction and playing an active role in defending its right to be represented in the public domain. The term 'pro-anorexia' is thus about both the right to *be* anorexic and the right to *represent* anorexia and the movement identifies these rights as sources of empowerment. By way of addressing how the notion of empowerment came to be so closely aligned with anorexia and approaching the questions it raises, we need to look at how anorexia itself has emerged as a central issue in public debates about slenderness and pressures on young women in the West. My focus in the following discussion is on how we might relate pro-anorexia to some recent media discourses about anorexia and how it positions itself in relation to them.

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The changing meaning of anorexia has been of interest to feminist scholars for a number of years (Bordo, 1993; Malson, 1998; Probyn, 1988; Spitzack, 1990). Some feminist approaches read anorexia as a metaphor for women's alienation resulting from the patriarchal oppression of women and women's bodies (Orbach, 1986; Wolf, 1990). Others, influenced by postmodern philosophies of the body see it as a problematic negotiation of contradictory discourses about femininity already existing within Western cultures (Bray and Colebrook, 1998; Lester, 1997; Probyn, 1988; Weiss, 1999). Interest in anorexia has not been restricted to critical theory however, and media discourses on anorexia have emerged in recent decades in the form of articles in women's magazines about the dangers of anorexia or the recovery story (Wright, 1998), commentaries on the promotion of waif-like models in the fashion industry in general-interest magazines (Couch, 1999) or the dangers of pro-anorexia websites themselves in the news media (Ashley-Griffiths, 2001).

From being perceived as a predominantly private psychological illness treated within the confines of the clinic or the family, it began to be identified in public debates throughout the 1990s as a condition bound to the culture of consumerism and in particular, to systems of representation that encouraged women to construct their identity by reducing their bodies and managing their appearance. Although these debates had begun earlier during the late 60s and 70s in response to fashion models such as Twiggy, it was not really until after the appearance of the 1980s supermodel, that the promotion of methods for controlling the female body, like dieting and exercise regimes became the targets of serious social comment. Feminist writers such as Susie Orbach (1986), Susan

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Bordo (1993) and Naomi Wolf (1990) began writing about the impact of the media's promotion of the slender ideal and linking it to rising rates of anorexia and bulimia in capitalist cultures. The impact of feminism was also starting to be felt in media discourses as anorexia was increasingly associated with the impact of consumer industries marketed directly at young women and a variety of cultural demands on the female body that were felt to be endemic to the West's approach to the body at large.

It was not until the early 1990s however, that the fashion of the highly controlled and sexualised 'supermodel' body was replaced by a waif-like body, exemplified by British models such as Kate Moss and Jodie Kidd. In what heralded the 'grunge' image, the underweight, pre-pubescent appearance of waif-models represented a kind of nonchalant, risk-taking subjectivity, far removed from the carefully managed gym-pumped body ideals of the 1980s. Although the fashion industry did not directly appropriate the clinical 'anorexic' body, both feminists and the media identified the waif-body as close enough to anorexic proportions as to be offensive and potentially dangerous to young women and girls who may aspire to achieve them.

As these debates about fashion and anorexia developed, a contradiction emerged between feminist demands to reject such extreme ideals of slenderness and media companies who continued to use the thin female body for marketing products and who sought to maintain a 'normative' idea of slenderness to do so. Although media commentaries about the waif often focused on the dangers of the fashion industry for both workers and consumers, they also effectively began marking out the boundaries of an 'acceptable' level of slenderness. In low-culture media publications such as

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Australia's *Who Weekly* or *NW* magazines, anorexia was constructed as a deviant form of slenderness, a problem of excessive conformity that was potentially 'contagious' amongst young women. Words and phrases used to describe the thin appearance of celebrities like 'horrific', 'appalling' and 'too thin' contributed to the growth of an intensely moralistic discourse on the anorexic body as it was deemed unfit for consumption and simply unacceptable to the public eye.

During this period the thin female body had become a site of contention, not only because its association with anorexia challenged the economies, not to mention the ethics of dominant industries such as fashion and dieting but because the social meaning of slenderness was no longer clear. Did 'thin' signify the success or failure of a woman? Did it mean that a woman was an 'individual' in control of her life or a victim of social pressures and not an individual at all? Through its association with narratives of pathology and anorexia, slenderness began to be seen during this period as a façade, an image of Woman that concealed hidden conflicts, both social and individual.

At a time when feminism was encouraging women to reject the pressure to be slim and embrace their bodies without weight loss or cosmetic alteration, this perceived crisis about slenderness and individuality accumulated around the figure of the female celebrity. Actresses like Calista Flockhart and Lara Flynn Boyle (who are now, along with Jodie Kidd and Kate Moss, favoured role-models in pro-anorexia's 'thinspiration' menus) were targeted by the media as suspect victims of anorexia and hounded as such for interviews about their diet, the pressure they experienced from directors, and their own personal histories. Through this intensified media attention, it was no longer possible

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to confine anorexia to the problems of the vulnerable consumer and it became embroiled in a variety of debates about women's freedom within systems of representation, success and individuality, and relations of power between women's bodies, images and the institutions that regulate them (Johnston, 1996; Michell, 2001). The meaning of anorexia within media debates thus moved beyond a strictly clinical register and became associated with the realms of power, gender and identity as it entered the zone of the 'social issue' as distinct from the 'individual illness'.

Pro-anorexia entered this arena of public debate around 1998 and challenged some of the boundaries that had previously governed approaches to both the experience of anorexia and its representation. The websites emerged as a kind of hybrid discourse on anorexia, a public forum that challenged the media's attempts to demonise anorexia and identify anorexic bodies as unacceptable for public consumption. Here was a form of anorexia in the highly public field of the internet in which there was apparently no question about whether or not the subjects were anorexic - they were and they were proud of it! In an attempt to challenge any interpretation of the anorexic as a victim of social pressures or 'unconscious' forces, pro-anorexia websites claimed "contrary to popular misconception, volitional anorectics possess the most iron-cored, indomitable wills of all. Our way is not that of the weak..." ('Ana's Underground Grotto'). Their concept of 'volitional' anorexia also attempted to challenge notions of anorexia as an illness, aligning it more with the concept of choice. As an internet-based movement, pro-anorexia also challenged ideas of anorexia as a solo or individual endeavour, claiming very clearly an allegiance with a larger collective, demanding the rights to social representation and

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participation in the public domain. By aligning itself with a discourse of rights, the movement began to represent an 'active' negotiation of discourses and meanings not just about femininity but also about anorexia itself.

Whether the communal aspect of pro-anorexia arose from the growth in public awareness of anorexia or the ensuing spread of interpretations is debatable but it did lend pro-anorexia a particular political voice that had not been heard before *en masse*. The media backlash against the sites became a target for this political voice, as the following pro-anorexia petition suggests:

'society says that supporting eating disorders is politically incorrect; yet clothing in most stores is sold in sizes 0-12, while the average American woman is a size 14....there is little done to protect the rights of women over the size of 12 for being harassed for her size, or anything done to change society's views of thinness and beauty. Until this changes we want our equal say about how to live with society's image of beauty that is forced upon us, and how we are attempting to attain that...'
(www.gopetition.com/online/855.html)

Clearly this is a statement about living with and negotiating the pressures of slenderness and the right to represent the outcome. The idea of anorexia as a protest (in the form of a 'hunger strike') against prescribed femininity is not a new one (Ellman, 1993; Orbach, 1986) but the methods by which this protest is carried out (i.e., self-starvation) are often seen as much self-effacing as self-affirming. In the case of pro-anorexia, the attempt to protect the right-to-representation is itself often diffused by the

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movement's use of the same structures of meaning that are the target of its protest. By looking more closely at the 'thinspiration' menus which promote slenderness through the consumption of photographs of slender femininity, we may go some way to untangling the complex web of contradictions that pro-anorexia presents as both a protest against and symptom of specific cultural pressures.

A standard feature of pro-anorexia websites is a menu titled 'Thinspiration' or 'Triggers' which presents images of slender models and celebrities, and sometimes photographs of clinically anorexic women as sources of inspiration. Images are selected from magazines and internet sites and used to promote or 'trigger' practices of self-starvation in visitors to pro-anorexia sites. The consumption of imagery is presented as having the power to support, and potentially produce anorexic behaviour and is a central part of the shared experience of being pro-anorexic. Images are shared between anorectics as sites encourage their users to send in their favourite thinspiration pictures, and they serve as a promotional device to attract other users to the sites.

In feminist literatures proving a psychological link between anorexia and the consumption of cultural imagery has been a troubled area of research, partly due to a desire amongst feminists to avoid theorising anorexia as a passive position or condition (Bray, 1996; Bray and Colebrook, 1998; Probyn, 1988; Spitzack, 1990). It is generally accepted however, that cultural images of slenderness and the widescale objectification of women in consumer cultures play a central role in subordinating women and manipulating their desires and behaviours. Carole Spitzack states: '(w)omen are socialized to view the ongoing surveillance of their bodies as a form of empowerment

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that arises from self-love....a greater proximity to feminine imagery within culture points to greater appreciation for oneself' (1990: 35). Whilst theorists have interpreted images of slenderness as a cultural mechanism for controlling the way women see themselves and their bodies, pro-anorexia actually demonstrates how this control is enforced and experienced. The space of the website enables the consumption of images to occur in a very selective way as girls may choose images, cut and paste them to share with those who visit the sites. The heading on one site reads 'everybody's ideal is different. Some of us like the chiselled look, some like the frail look, some just wanna see bones. Whatever your taste, hopefully you will find a picture here to trigger and motivate you' ('Ana's Underground Grotto'). Unlike the broader cultural concern that images of slenderness are available to all women and only those 'vulnerable' to their message may actually try to attain the perfection they promote, pro-anorexia foregrounds the pursuit of slenderness through consuming imagery as an accessible strategy and a definitive motivating force for self-starvation.

Although some sites claim the movement is a protest against the dominance of the slender ideal, 'thinspiration' suggests that this ideal is also the very fuel for anorexia. My concern here is that despite pro-anorexia's message about anorexia itself, the movement turns to the space of the image to articulate its messages and ultimately to encourage the embodied outcome of anorexia. In attempting to claim an identity or a voice for themselves, the image of slenderness is identified as a primary source of power. This contradictory attempt to claim power by adhering to a culturally dominant ideal aligns with Susan Bordo's view of the position of the eating disordered individual. She

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sees “eating disorders as arising out of and reproducing normative feminine practices of our culture, practices which train the female body in docility and obedience to cultural demands while at the same time being *experienced* in terms of power and control” (1993: 27). Elanor Taylor (2002) expresses a similar view but with particular reference to the language used on pro-anorexia sites. She states: ‘The softer sites use the language of ‘girl power’, the more militant sites use the language of Marx. Both display the horrific irony of women rendering themselves weaker in the name of strength.’ Pro-anorexia websites are contradictory spaces of both risk and confinement. They are characterised by an illusory rhetoric of power and regimes of strict rules which, although apparently ‘self-imposed’, conform to our understandings of the impact of social pressures on women to be thin. I suggest that if we can understand pro-anorexia as an example of the kind of ‘internalized forms of oppression that make (women) easier to control’ (Bartky, 1990: 51), we may be able to see it as a symptom of the same cultural climate from which feminists suggest anorexia arises in the first place where slenderness is equated with success and body reduction with control.

Despite pro-anorexia’s rejection of the victim tag and its insistence on seeing anorexia as a pro-active stance, its promotion of ‘thinspirational’ images exemplifies the paradoxical power promised to women through controlling their bodies and conforming to the slender ideal. I suggest that pro-anorexia participates in the same structures of power that produce dominant images of slenderness in the first place and which feminists for a number of years have identified as a source of women’s oppression and unhappiness. ‘Thinspiration’ thus tends to cancel out any legitimate claim to a ‘feminist

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stance' in the movement's demands for the right-to-representation and instead aligns it with discourses that seek to control women through 'promises of body liberation that in fact speak to powerlessness' (Spitzack, 1990: 36). Thinspiration may be approached as a crucial symptom of pro-anorexia that reveals the extent to which young women still identify the space of the object or image, at the expense of the body, as the only space in which they can articulate their subjectivity. As a broader cultural symptom, pro-anorexia exemplifies the extent to which idealising the slender female body continues to produce contradictions in women's sense of power, agency and control.

As an extension of the movement's concern with representations of body reduction, it is worth mentioning briefly here, that the internet itself may be seen as a seductive space in which communications between people are effectively 'disembodied'. The anorexic impulse to 'get rid of' or 'get away from' the body (Lester, 1997) is thus supported by the internet as a medium that promotes communication through the exchange of immaterial representations, as distinct from material bodies. Through its use of the internet, I suggest that pro-anorexia supports a form of communication that promotes the suppression of the body as a means of acquiring power and acceptability and exchanging ideas. In this sense, it actively supports the broader cultural devaluation of the material body and the divisive and potentially damaging binary codes of mind/body that recur in Western philosophical traditions. Jenny Sundén states that 'cyberspace is often described as completely disembodied – as a space unconstrained by the meaning and matter of the corporeal' (2003: 4). Similarly, Mark Lajoie suggests that the internet is a seductive space, because it promises to 'obscure or silence the problems involved in

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material existence, hiding them beneath an almost seamless wall of representations’ (1996: 167-8).

Through its use of imagery and the ‘dis-embodied’ space of the chatroom, pro-anorexia exploits the internet as a space which privileges the representational over the material body, and allows for communication effectively without or beyond bodies. In the play of inter-textual meanings and codes within pro-anorexia discourse, anorexia appears to belong more to the realm of representation than to the world of material bodies. What is perhaps most disturbing about visiting the sites is not that anorexia seems to have been subsumed by promotional narratives promising access to power but a complete absence of the bodies that are so crucially implicated in the discussion. I suggest that the questions this raises about the cultural value of the female body and the appeal of disembodied modes of communication that are *vital* to any discussion of anorexia are significantly more important than discussing whether the sites should be allowed to exist or not. It would also be interesting to find out whether such pro-anorexia groups exist ‘in the flesh’, that is on the ground within the community or whether they are restricted to the internet and the culture of cyber-talk.

In 1986, British therapist and writer Susie Orbach wrote of anorexia that it is ‘an attempted solution to being in a world from which at the most profound level one feels excluded, and into which one feels deeply unentitled to enter’ (1986: 103). Pro-anorexia seems to exemplify this particular paradox between feeling isolated from society and yet desperate to be allowed to take part in the world and be accepted. By way of conclusion, I want to stress that banning or censoring these sites may only intensify the sense of un-

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entitlement and exclusion that anorexia sufferers already painfully experience. Banning pro-anorexia websites seems a little like banning anorexia, the idea of it fuelled by a fear of allowing the disorder to enter a political or public domain.

Pro-anorexia raises crucial questions for us about the moral and political structures through which we control access to public representation and decide on *who* is granted that access. It asks us to consider the ways in which the meanings of mental illnesses such as anorexia are mediated by discourses of medicine or the media, and the extent to which anorexics themselves are granted access to methods of self-representation. On other levels, the fact that pro-anorexia actively encourages the consumption and pursuit of the slender ideal, should alert us to the ongoing prevalence of cultural constraints placed on young women's subjectivity. These constraints are enforced through a range of discourses, particularly those of the media and morality and apply to the management and presentation of the body. As a symptom of these constraints pro-anorexia points to the lack of access in our culture, to modes of female subjectivity that *do not* involve controlling, suppressing or sexualising the body. It also highlights the prevailing pressures on young women to see the successful 'management' or reduction of their bodies as the only way in which they can participate in public discourse and gain acceptability. Pro-anorexia challenges many boundaries that govern social acceptability but despite its many contradictions, it reminds us that young women's bodies are indeed political bodies, and that this becomes ever more crucial in their pathology.

The questions that pro-anorexia raises cannot be answered by discourses that promote further surveillance and censorship of the bodies and activities of young women.

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Rather than seeing pro-anorexia as a threat to the presumed 'safety' of the public domain, I suggest we need to see it as a disorderly discourse, arising directly from contradictions within the discourses it negotiates and the meanings of the bodies it affects. The growth in public discussion about consumer-related anorexia and now pro-anorexia websites forces us to reconsider how we distinguish 'normal' (or acceptable) from 'pathological' (or unacceptable) forms of femininity and who has the right, or the power, to represent them. Overall, pro-anorexia encourages us to rethink the kind of power that anorexia itself can generate in a culture where the female body remains a primary site for the marking out of moral boundaries *and* defining their transgression.

Vincenzo DiNicola (1990) has suggested that self-starvation is a 'historical chameleon' whose meanings and motivations change as our culture changes. At the beginning of this century, pro-anorexia prompts us to consider anorexia's changing relation to the interplay between power and femininity in the public field and the impact of such technologies as the internet on the meaning and experience of anorexia itself. As pro-anorexia represents anorexia as a complex and political form of identity I suggest that we might see the internet as an example of what Mark Seltzer has termed "the pathological public sphere" which is "everywhere crossed by the vague and shifting lines between the singularity or privacy of the subject, on the one side, and collective forms of representation, exhibition and witnessing on the other" (1997: 4). In its own contradictions and demands for representation, pro-anorexia asks us to rethink anorexia as a strategy for negotiating contradictory discourses and confronting the challenges that technologies like the internet present for us in understanding young women's immediate

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experience of their position in society, and the pressures they feel on their bodies and selves.

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REFERENCE NOTE The pro-anorexia websites mentioned in this article are not referenced here using standard APA format. The publication of this article is not meant to promote the use of any pro-anorexia websites nor promote censorship. Interested readers can make use of their standard internet search engines to identify current websites.

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Suicide Prevention by Voluntary Private Medicine and Business

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Abstract

This article outlines telephone service and internet initiatives to combat the high prevalence of depression, attempted suicide and completed suicide existing in Australia in the late 1990s. Private medical practitioners and a private businessman established a heavily used telephone service designed to attract male callers. Subsequently www.suicideprevention.com.au and www.aftersuicide.com.au were initiated. The article gives an overview of the suicide prevention messages used and the pattern of calls and internet hits.

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If we warn our adult children to drive safely, we should also warn them about suicide

In young adult males, loss of life from suicide is as common as loss of life from car accidents, and their suicide rates have increased considerably in recent decades in many countries of the world. In young women worldwide, suicide is second only to TB as the major cause of death in the age group 15 to 44 (Jamison, 2000). Elderly males have higher suicide rates than the general population. Recent concern in Australia has focused on the increased rate of suicide in men aged 25-44 (LIFE, 2000; Webster, 2001). Forty Australian men and 10 Australian women die by suicide each week, and estimates of attempted suicides each year are ten to forty times that number (Hassan, 2001).

“Psychiatric autopsy” studies have shown repeatedly that over 70% of those who die from suicide have depressive illness. A past-president of the UK Royal College of General Practitioners, Dr John Horden, described the pain of depression as far worse than the pain he had suffered in previous personal experiences of kidney stones and a heart attack (Wolpert, 1999). Two other distinguished sufferers of depression, Prof Lewis Wolpert (Professor of Biology at University College London) and Prof Kay Redfield Jamison (Professor of Psychiatry at the Johns Hopkins University, and Honorary Professor of English at the University of St Andrews in Scotland) both describe their own depressions as progressively disabling mental paralysis and extreme pain, accompanied by a unique sense of such hopelessness and futility that suicide becomes an inviting and

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“logical” solution. Prof Wolpert only accepted intensive treatment of his depression when his wife agreed to help end his life if treatment failed, and Prof Jamison describes her own nearly-fatal suicide attempt (Jamison, 2000, Wolpert, 1999, Jamison, 1995). If such prominent individuals are tempted to suicide in the face of the suffering of depression, there is clearly a great need to find alternative solutions.

Suicide Prevention: Stigma and Success

To many people in our society, regardless of age or background, the mere suggestion of talking to a doctor or seeing a psychiatrist about emotional issues is tantamount to an insult and is personally unacceptable, leaving distressed people to take desperate measures.

Depression, and its associated risk of suicide, is a silent epidemic. The World Health Organization, in its monumental study “The Global Burden of Disease”, has shown that depression will be second only to heart disease in worldwide morbidity by the year 2020 (Murray, C. J. & Lopez, A. D., 1997). Five to seven percent of the population have had fleeting thoughts of suicide in the previous year (Goodwin, 2001). Young people in particular, facing expectations of performance earlier in life than previous generations, may not have adequate personal experience and access to supports when faced with problems, especially if they are also experiencing depression, and/ or alcohol or other substance abuse.

Clinically, it seemed to David Horgan (DH) that a major difficulty in preventing suicide was the absence of easy and anonymous access by the general public to information on suicide and depression. It appeared that the stigma attached to emotional

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problems, and the reluctance of many Australians to discuss emotional suffering, even in a personal telephone call to available crisis agencies, prevented many distressed and suicidal people from accessing the current sources of help.

Australian telephone directories, widely used to find appropriate services generally, had no information entries under the word “suicide” or “depression” in the late nineties. Lack of awareness of psychiatric illness, and lack of awareness of the potential benefits of treatment, have been confirmed in The Australian National Mental Health Survey (Andrews, Henderson, & Hall, 2001). One can only wonder if lack of easy access to services in rural Australia contributes to the fact that rural suicide rates are consistently higher than in metropolitan areas (Webster, 2001).

It was concluded there would be benefit from providing a mechanism whereby help and information was available totally anonymously, and specifically free of the need to interact with another person, 24 hours a day. A dedicated telephone line and answering machine, providing detailed medical information on suicide prevention, and on the recognition and treatment of depression, seemed likely to add to the armamentarium of services available.

The telephone service was initiated in 1997. All 55 telephone directories throughout Australia since 1997-98 carry the entry “Suicide Prevention Medical Specialist Information Pty Ltd 1300 360 980” in bold black letters. The self-explanatory company name, starting with the word “suicide” was specifically chosen (to ensure its most relevant placement in the directories), and the word “psychiatrist” was deliberately left out, in case some callers would be deterred. The entry states that this is recorded

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information (specifically to encourage those uncomfortable talking about their thoughts), and that the cost is a local call cost only (the authors and their sponsors pay the balance of the call costs for long-distance and mobile phone callers).

In mid-2000, an Internet website (www.suicideprevention.com.au) was established, providing similar information. This Internet address now also appears with the telephone entry. In 2002, a website providing support for those bereaved by suicide has been provided, www.aftersuicide.com.au. The sites also provide links to www.depression.com.au, owned by DH.

The Message

As hopelessness is the psychological component most clearly shown to be associated with suicide, the telephone message emphasises there *is* a way to stop the urge to suicide. Suicidal thoughts are relabeled emphatically as persuasive but distorted forms of thinking, resulting almost certainly from depressive illness. The situation is described as analogous to a computer virus or an internal alien, giving convincing but totally inaccurate perspectives.

Common features of depressive illness are described, and it is emphasised that the hidden suffering attached to this illness is well recognised by doctors. Advice is given as to what measures can be used by the sufferer to fight off overwhelming suicidal urges at that time, until professional help can be obtained, ranging from ensuring the person is not alone through to taking safe doses of medication to go asleep until the urge passes. The benefits of non-addictive modern antidepressants in severe illness are emphasised. The

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full message lasts approximately 10 minutes because of deliberate repetition of the core points.

Telephone callers are given a post-office box to which they can write for a transcript of the message, and additional information, including a questionnaire of depressive symptoms they can bring to their doctor, if they so wish. Obviously, Internet users have a wealth of written information on the two sites described.

Results

The telephone service receives 7,000-8,000 calls each year, a remarkable number of calls in a country of only 20 million people, not all of whom are English speaking adults, and for a service that has not been able to afford any publicity. The average caller listens for almost five minutes, a long time to listen to a recording, and suggesting they are not just casually curious callers.

Geographically, based on calculations from the 1996 census, most calls per head of population came from Tasmania, followed by ACT, Queensland, Northern Territory, New South Wales, South Australia, Western Australia, and fewest calls came from Victoria. In general, calls were more frequent from non-capital city populations, with the exceptions of Hobart and Darwin, where approximately one person per thousand called the service in the year 2000 alone. This compares with only one person in every 7,000 in Sydney calling the service.

Twenty percent of calls were made in Summer, 23% in Spring, 28% in Autumn, and 29% in Winter. One can only wonder if more awareness of the service would have increased the calls in Spring and Summer, the seasons of most suicides in many

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countries, including Australia (Jamison, 2000).

Most calls are made on Monday or Tuesday, with roughly equal numbers of calls on these two days. Calls on Wednesday, Thursday and Friday are next and equal in frequency, with calls on Saturday and Sunday being equally least frequent.

Most calls are made between noon and 6 PM (42% of all calls), and 28% of calls are made between 6 AM and noon. Twenty four percent of calls are made between 6 PM and midnight, and 6% of calls are made between midnight and 6 AM.

The Internet site www.suicideprevention.com.au is heavily used, with a tendency for most hits in the early hours of Saturday morning and Sunday morning.

About 300 people a year request written material by sending a stamped-addressed envelope. Many of the requests for written information are made out of concern for family members and friends.

The Benefits

The community benefits are intangible. Apart from the steady flow of positive comments in letters received from those requesting written material, including many letters stating the telephone message or the Internet site have aborted a definite suicide intent, there is no way of statistically proving the benefits. However, given the increasing awareness of depression, and concerns about suicide in the community, having had over 13,000 callers in the past 2 years alone speaks volumes. Hopefully, this service has contributed to the marked drop in youth suicide in Australia since 1997.

The White Knights

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Over the first few years of the telephone service, the number of calls and their costs rose dramatically. Furthermore, the costs of maintaining a highly visible bold print entry in the 55 telephone directories of Australia have risen markedly in excess of inflation, with no reply to repeated letters requesting an explanation. As the directory charges and volume of calls progressively increased, the financial viability of the service became an issue.

On being informed of the progressive financial burden of the services, Mayer Page (MP) immediately took over the directory and call costs associated with the service. He also organised for statistical analysis of the service. Philip Chubb (PC) provided the website design and setup costs for suicideprevention.com.au and for depression.com.au, and now pays the web hosting fees for these sites. The psychiatrist's medical defense organisation (MIPS) has agreed to provide medical indemnity cover for the service at no charge, although not strictly a direct component of the author's medical practice.

The Role of Internet Medicine: Comment by PC

Many people turn to the Internet for information about their own health or that of a loved one when they become ill. There are more than 20,000 health web sites, and selecting useful sites can be difficult.

However, easy access to virtually limitless health and medical information has pitfalls, experts caution. "My advice to consumers about information on the Internet is the same as it is for other media: You can't believe everything you see, whether it's in a newspaper, on TV, or on a computer screen," said Bill Rados, director of the USA Food and Drug Administration's (FDA) Communications Staff. Since anyone -reputable

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scientist or quack- who has a computer, a modem and the necessary software can publish a Web page, post information to a newsgroup, or proffer advice in an on-line chat room, "you must protect yourself by carefully checking out the source of any information you obtain" (FDA Consumer, 1996).

Global Vision Media has been a successful website development company and thus understands the pitfalls of quackery on the web. During a discussion with DH about youth suicide, PC became increasingly aware of the extent of the problem of youth suicide and the anguish it causes. He also understood that the web would be a very effective means of communication, but had to have reliable content from authoritative sources. The web must be viewed as an extremely valuable source of health, but the experts must rule.

Global Vision Media staff have worked closely with Dr. Horgan for a number of years, now trying to make the web save lives, and perhaps we have. There is more we would like to do with the site it built that could help people post questions and read messages, much as they would on regular bulletin boards. Through "mailing lists," messages are exchanged by E-mail, and all messages are sent to all group subscribers. In "chat" areas on some services, and on the Internet's IRC (Internet Relay Chat), users can communicate with each other live. This function is of enormous benefit to the ill, providing a sense of community and support, as well as a means of accessing valuable information.

Future Needs

The most pressing need is to find a way to stop people who are suicidal from

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acting impulsively, and instead seeking some form of help for their distress. This is a severe challenge to all suicide prevention services. It is also important to prevent suicidal callers receiving the ultimate rebuff of finding that the “last hope” telephone line is engaged!

The most frequent feedback from actual users of the service is surprise to find these services exist, and repeated calls to make the existence of the services more widely known. A sustained level of publicity would obviously increase awareness and utilisation of the telephone service. Extra funding or industry sponsors would also allow the Internet sites to be found more easily by those searching under “suicide”. Ideally, mechanisms could be put in place to provide links from these telephone and Internet services to other sources of help in the community, if the callers wished to access such options.

As GPs and non-psychiatric specialists often feel out of their depth when discovering highly suicidal thoughts in their patients (Krupinski, & Tiller, 2001), a hotline to allow medical professionals immediate access to a psychiatrist would seem very useful. The long waiting lists or closed books of many overworked psychiatrists are a phenomenon only too well known to referring doctors (Harris, Silove, Kehag, et al., 1996).

In the needle in a haystack search for predictors of suicide, the group requiring most future care are those who have survived a suicide attempt. Approximately 10% of these people will die by suicide in the next 10 years, and half to a third of suicides have a history of a failed previous attempt (Fawcett, Scheftner, Fogg, et al., 1990; Tejedor, Diaz, Castillon, & Pericay, 1999).

There are reasons to continue with services such as described here. In a number of countries in the world, including Australia, suicide rates are falling in adolescents, and in

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the elderly. Increased community awareness of depression as an illness, and the introduction in recent years of antidepressants with minimal side-effects are the factors considered pivotal in turning the tide in such countries (Rutz, 1999).

However, all these initiatives require money and the generosity of the existing individual and pharmaceutical company sponsors cannot be expected to continue forever. The Commonwealth government and the Victorian government have both refused a recent request for funding, apparently preferring to give support to large organisations. The authors have no wish to convert this suicide prevention service in Australia into a user-pays service. Accordingly, all offers from industry and others to assist with continuing, and hopefully expanding, the services will be gratefully accepted!

Conclusion

This example of combined voluntary efforts by a doctor and local businessmen continues to provide the Australian community with a widely used service 24 hours a day. Innumerable medical professionals and non-medical individuals around Australia are heavily involved in the support of their country and their local community in multiple different ways, and harnessed together are the real “silent achievers”. Increased community awareness of many voluntary activities such as this one may put into different perspective the stereotypes of private practice doctors and businessmen.

Postscript

Unfortunately, Mayer Page has died since sponsoring the service. His contribution will not be forgotten, and his wife continues to sponsor the service. The Australian

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Suicide Prevention Foundation (“Ask, Support, Persevere, Friends for life”) was established through his advice, is a registered health promotion charity, and is currently awaiting tax deductibility status.

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Up Close and Personal: Counselling on the Net

John Court

Barry Lloyd

Monique van der Neut

Abstract

Many counsellors have reservations about using the Internet for counselling, lest it destroy the essence of the intended relationship. Fear of the new technology is also widespread among human service professionals. Yet the potential for net-based counselling is enormous among groups who might otherwise be severely limited in their ability to locate a counsellor. As an increasing number of younger people treat the Net as a normal part of their lives, strong, close and trusting relationships develop through chat groups. There is a need for counsellors to be a part of this world, seeing it as a present challenge and a future opportunity.

While counsellors are now offering web based services, it is not an easy transition from face-to-face (f2f) counselling to relating on the Net. Without rethinking and training, the transition can be abortive. With the rapid changes in modes of communication on the Net, the counsellor also has to be making constant adaptations. This paper will describe the development of a Web-based training program for graduate counsellors, and specifically argue the benefits of using a chat program such as ICQ for natural and immediate communication. Lessons learned in the development process will be noted, with examples of the benefits clients have reported.

Introduction

There is a solid tradition in counselling and psychotherapy that it must involve a close trusting relationship if it is to be effective. Training for this typically includes understanding the importance of nonverbal cues and the importance of spatial distance, with the assumption that closeness and intimacy are highly correlated (Argyle, 1976). Hence therapists pay a great deal of attention to the environment within which they work, seeking to make the place safe and comfortable for their clients (Brien, 1990).

It would seem to follow that communication via the Web and using email could only be a pale reflection and a poor alternative to the tried and true approach. Being able to observe gestures, to appraise appearance, and pick up the cues that arise from being in the same space with another person have been viewed as key components in the development of the trust relationship. Both therapist and client have found these messages to be important in making decisions about change and whether to continue working together.

It is therefore something of a paradox and a challenge to conventional wisdom to find that net-based communication can not only be effective, but even in some cases the preferred mode of engaging with a therapist. It certainly is confusing to traditionalists that lasting, trusting and close relationships between client and counsellor can be forged. The advent of easy access to online communication has opened up a whole new vista of possibilities, yet they also present real challenges to counsellors who have been trained to

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attend in the traditional f2f mode. There has certainly been an incremental upsurge in the provision of on-line counselling services, especially in the US. This has also been the case for free services to young people in Australia (e.g. <http://www.kidshelponline.com.au>) and in Singapore (e.g. <http://www.metoyou.org.sg>) as practitioners have seen the demand for them. These programs offer training, but generally the delivery services have not been matched by a comparable attention to training, professional supply, or the exploration of the ways in which the newer approaches can be applied ethically and effectively.

Although on-line counselling was first seen as a way of providing services to those in rural and remote location, who would otherwise be unable to access a practitioner (Court & Dollard, 2000), it has become clear that the approach has much more general applications. As widespread access has become more economical and user-friendly, especially among younger people, it is clear that electronic communication has become part of the culture with an ease that makes the use of online services part of everyday life and no longer an obstacle to self disclosure. Obvious examples of this are the ways in which chat rooms and multi-player on-line gaming are being used for social contact, and to make online friendships, sometimes leading to permanent offline relationships (Mulrine, 2003). Similarly the teenage culture has moved away from long hours on the telephone, to an energetic life of SMS messaging, while email addiction is becoming a reality among many groups (Morris, 2002).

On-Line Counselling In Use

This paper deals specifically and only with 'realtime counselling'. It doesn't address what may be deemed delayed or 'off-set' counselling as represented by messaging; e-mails et al. For a description of the pros and cons of delayed or 'off-set' counselling the reader is referred to Pelling (2009). For the purposes of on-line counselling it's important to clearly understand the differences between realtime and delayed response counselling, as it substantially affects the method in which counselling on-line is effected.

Unlike f2f counsel, on-line counselling with a delay built-in is largely, impersonal, and has no demands for the counsellor to be "alert/ immediately responsive". The delay enables proffered data to be processed at ease, and in contemplation. While this is potentially quite useful, if dealing with emotive issues, yet it has the drawback that there is no knowing what editing the client has utilised in deciding what to reveal or address.

Realtime counselling has immediacy, and is demanding on the counsellor in ways unlike any other method, even f2f.

There is a variety of realtime on-line communication programs (known as "chat programs"), but in deciding which one to use, general popularity, cost and ubiquity are

essentials. Practical considerations meant that our primary experience is in using a program called ICQ. Primary factors influencing this choice were:

- An established user base of some 18,000,000 + people
- Free of cost to obtain and use
- Widely and easily available
- Simple to use
- Functionality ... there are approximately 25 servers (exchanges) and so "busy signals" are rare.
- Speed
- Privacy / Confidentiality
- Facilitated record keeping
- File Transfer Protocols inbuilt
- Variety of communication modes inbuilt

Of particular use in our opinion is this last option, because it enables:

(i) The ability to leave / receive messages without both self and client being on-line simultaneously. This means the sender can transmit whenever it suits them, in the knowledge that the message (usually) awaits the recipient the next time they connect to ICQ.

(ii) Instant Messaging back- and forth with both parties on-line.

(iii) International Relay Chat (IRC) mode enabling 'Group Therapy' on-line by identifying each speaker every time they speak, a whole sentence at a time.

(iv) Chat mode, wherein each speaker has a personal customisable screen which displays each typed character as the sender strikes that key.

Chat mode is the method we use for counselling because it has (from the 'common group' of available programs) two unique advantages. It provides a direct peer-

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to-peer connection from client to counsellor, bypassing the servers and thus ensuring privacy without the need of an encryption program. Intercepts of communications on-line are enabled by illicit accessing of servers. This truly is "real time chat" in that, as a key is pressed on the keyboard, so the appropriate letter appears on the other's screen. This allows a modicum of feed-back in that with experience one can interpret both delays and unusually speedy responses, whilst hesitations are revealing.

This approach has been developed into an on-line teaching format using CD-ROM for graduate students of counselling.

Differences/ Similarities to F2F

The only real similarity between f2f counselling and on-line counselling is in the variety of counselling modes that can be used, as best suits the counsellor, though unless a client is a proficient typist, approaches such as narrative therapy can be painfully slow. Experience has shown that the most suitable mode is Cognitive Behaviour Therapy (CBT), and our experience is that Rational Emotive Behaviour Therapy (REBT) is particularly liked by clients.

The prime difference is the enhanced security clients find in not having to physically face the counsellor, enabling very rapid revelation and discussion of relevant material, particularly such as is needed by clients recovering from sexual abuse.

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Facilitated in this way, client/ counsellor relationships form rapidly and enable, with the right approach, rapid progression.

Another surprisingly effective difference between on-line and f2f counsel is that the client has a written record of what has transpired in each and every session. This is advantageous in:

- a. Allowing, even encouraging, the ongoing review of the process of counselling, both between sessions and for the rest of their life, by the client. In effect, this provides a reference point.
- b. As both parties have written records, any confusion or misunderstandings can be clarified in fact, without the difficulties of what was 'thought' to have been said, or remembered as having been said, yet wasn't.
- c. Promoting continued thought, and on-going processing by the client of what transpired during each session. Experience shows this substantially speeds up the efficacy of counselling.

In practice, the final notable difference is in what can be termed 'client-conditioning expectations'. They are, being computer orientated, inclined to read and access information far more readily than many f2f clients. Thus they will use supplied material readily. As one's contact with clients is computer based, it is easy and cost-free to supply them with tailored written pieces on line. We are convinced that

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provision of such material, along with the written record of each session, explains why self-improvement can be so very fast when on-line counselling is used.

Suitability and Examples

It is our opinion that not all needs/ issues can be met or are suitable to address through on-line counselling. The primary type of unsuitability is relationship-based, such as marriage counselling. Certainly this has been an area we have avoided, on the basis one needs to be aware that both/ all members of the relationship (such as husband and wife) hear and process all that is said. It's somewhat uncommon for two or more members of a family to be on-line and able to communicate simultaneously with the counsellor. This said, it's interesting to note that there is only one entry in the Australian OnLine Yellow Pages for Internet counselling, and that is by Relationships Australia.

By far the majority (63%) of our work- involves a substantial element of recovery from sexual abuse, usually committed in the client's childhood (58%), and never adequately dealt with, despite long-term counselling. 5% has involved recovery from rape by an unknown assailant, and then, in order, spousal abuse (18%) primarily psychological disorders, involving depression/ self-esteem, loss of confidence (12%), with the balance (7%) made up of agoraphobics and medical problems (cancer / broken neck, etc.).

We have turned away about another 25% of business, as being not best suited to on-line counselling in the areas of relationship and stress. A suitable stress counselling package is being constructed, and it is envisaged that, in the near future, such clients can be suitably served on-line.

Efficacy & Evidence

Online counselling is sufficiently new, and as yet sufficiently unregulated, as well as of such varied format, that there is as yet no way to measure long-term efficacy, and evidence, as proof, is not available. There is a variety of organisations, nearly all USA based, running surveys and feed-back options, but until the methodology is established, proof per se cannot exist (but nor can it, in any pure form, exist for f2f counselling). It is of note that the American Counselling Association has welcomed and supports on-line counselling. In our experience, supported by anecdotal feedback, clients receive fast and durable benefit from on-line counselling, with most clients being given sufficient tools to continue managing their lives within nine sessions. Such opinion is based on written feed-back, letters of appreciation, and the fact that ex-clients have not only volunteered to act as "contacts" via email to people needing to verify the viability of on-line counsel, but also choose to share the joys of their lives (births/ marriages, etc.) with their counsellor. We have an average of two or three international phone calls coming in each week- with people sharing their news, often after years of no contact. The greatest such gap is four years, from an ex-client who wanted to share her upcoming wedding in the local cathedral after years as an agoraphobic.

Discussion

Online counselling means many different things as new possibilities emerge and the technology keeps changing. This paper argues for the benefit of risking immediate communication along lines similar to those occurring f2f. This does not represent merely a transfer of skills from f2f counselling, as it calls for a new and specialised set of skills in reading interpersonal nuances without most of the conventional cues. Judging by the escalating use of the Internet for all forms of communication it is becoming increasingly necessary to develop on line counselling literacy to meet the needs of those many people who seek to develop and further close and/or personal relationships via the technology. This suggests a strong need for targeted training in the modality if it is to be used ethically. Such training may eventually show that there are some practitioners who are better suited to online counselling while others do better f2f. This is an empirical research question.

It is plainly obvious that the demands on an on-line real-time counsellor are for quick-wittedness, and above average communication skills. Because clients are at ease with the medium, in the comfort of their own homes (or office) and not inhibited by any awe of the counsellor, they ask questions freely, and seek clarification of concepts more readily than in f2f encounters. The counsellor needs the ability therefore to change footing speedily, and provide answers and clarifications promptly. Failure to do so

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undermines a client's confidence in the counsellor's competence. Thus a ready supply of easily understood metaphors and explanations is needed, pre-prepared.

In addition, the nature of the medium is "in your face" in so many ways, with questions and information passing freely that in f2f would be seen as embarrassingly intrusive and insensitive, that there can easily be a crisis of confidence/expectation engendered if a client senses avoidance, or (in their perception) an unusually slow progression in "getting to the meat" of a session. In this modern age, using modern media, speed in counselling is valued, so any on-line counsellor needs to shed the habits of f2f counsel which emphasise "slow and steady".

The question of confidentiality of data is increasingly raised in this medium as we encounter the potential for hacking into exchanges and abuse of the information gained (Pelling, 2004; Ragusea & VanderCreek, 2003). This has relevance to the use of ICQ since that program in its latest version (ICQ 2003) warns users that if it is used in message mode, it cannot be considered safe. However, once the program is established in "chat mode", the mode advocated here for counselling, there is a direct computer-to-computer link such that one can and should disconnect from the ICQ server, making the communication remarkably safe from intrusion. It is notable that emails use a minimum of three servers, and no attempt at security is usually made unless parties use encryption, whilst with ICQ one can even protect one's IP address, over and above content of communications.

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This approach is not totally safe from intrusion, even with the most sophisticated strategies in place, any more than are on-line bank accounts, so it is ethically incumbent on practitioners to take all reasonable steps to ensure client protection. There are other communication systems available as software packages for various teaching purposes, but they tend to be too expensive for the practitioner, and less accessible for clients with limited bandwidth.

We find that it is often those who are accustomed to f2f counselling who raise concerns about hackers and confidentiality, based on incomplete information about what is possible, usually because of issues surrounding the use of email. This is somewhat ironic when we consider how f2f counsellors and therapists often work in rooms with thin walls and even thinner doors allowing conversation to leak into waiting rooms: for good measure they install microphones for audio-recordings, video cameras for remote viewing, and write up case notes. This would be no challenge to someone wanting to bug a conversation, and the permanent products can all go astray in a briefcase. When it comes to vulnerability of data I suspect online work has fewer hazards.

This account represents a work in progress based on significant online experience. Those who use this modality commonly mix online contact with f2f and telephone communication where possible in order to create a more enriched interaction. Looking forward it is clear that the technology is advancing rapidly and will soon make our current efforts appear stilted. Cost and access issues currently limit the widespread use of such advantages as voice-activated keyboards, and the use of web cams, but this is

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the time to begin training and offering services that will be increasingly in demand as young people especially take online communication for granted.

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The Potential Role of the Internet in Suicide Prevention

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Abstract

As seen in areas of medicine and clinical practice, the Internet and its associated technologies have begun to change the nature of suicide prevention (Christensen, Griffiths, & Evans, 2002). The Internet is meeting gaps in services and providing a means to improve education, support and connectedness between and within communities and professionals (Atkinson and Gold, 2002). As the technical capacity of the Internet grows, it becomes better able to offer a practicable medium for health behaviour interventions and research. The following chapter will discuss current research into the potential role of the Internet in suicide prevention through the provision of information, counselling and chat rooms.

Internet for Information

There is evidence that seeking health information is one of the most common reasons for using the Internet (Christensen et al., 2002). The use of online health sites has grown much faster than the growth of general Internet usage. In 2001, mental health problems were amongst the highest accessed health issues on the Internet, with users most often seeking information on depression (19%), bipolar disorder (14%) and anxiety disorder (9%) (Rice, 2001).

Consumers are driven to the Internet for health information out of a desire for the empowerment that comes with information (Farrell & McKinnon, 2003). The ability to obtain information quickly, conveniently, and privately online presents an opportunity for better informed decision making and greater participation in health care (Berland, 2001). The Internet is especially useful for linking people to information and resources unavailable in their closest, local groups.

A need to educate the public about suicide prevention has been increasingly recognised in recent years with emphasis on the importance of knowledge in facilitating the recognition and management in the prevention of suicide (Pettigrew & Miraudo, 2003). The growth of the Internet has an enormous capacity to facilitate the development of mental health literacy and for providing suicide prevention programs to groups who would otherwise not access services (Christensen et al., 2002; Christensen & Griffiths, 2000; Farrell & McKinnon, 2003). An increase in mental health literacy has been found to have a strong relationship with an increase in help-seeking behaviour and therefore may provide an important contribution to suicide prevention (Fuller et al., 2000).

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Quality of information

With increasing reliance on the Internet for obtaining mental health information, concern about the quality and character of the information it contains has grown (Lissman & Boehnlein, 2001). Unsafe advice or poorly targeted information may lead to poor help-seeking behaviours or treatment choices (Barak, 1999). A plethora of inaccurate and even potentially life-threatening content readily accessible to anyone with access to the Internet supports the validity of concern surrounding the Internet as a source of information (Baker, Wagner, Singer, & Bundorg, 2003).

Numerous authors have voiced concern about the number of alarming and inappropriate information sites. Explicit information on suicide methods (non-fatal or unusual) has resulted in some Internet users, through imitation, suffering prolonged and excruciating deaths. Anecdotal evidence suggests that the Internet offers individuals with high intention easy access to information on methods, possibly informing them of more lethal options and thus impacting on completed suicide rates (Baume, Cantor, & Rolfe, 1997; Haut & Morrison, 1998; Suresh & Lynch, 1998; Thompson, 1999).

Internet as a form of media

To date a number of studies have found a significant relationship between the reporting of suicide and subsequent suicides. Both newspaper and television forms of media have been shown to influence suicidal behaviour, evident in clustering's of suicide following media coverage of a suicide. Some researchers suggest that if suicide is published then some vulnerable individuals may consider suicide themselves (Suresh & Lynch, 1998). No studies have been found to have examined the influence of suicide

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information and related reports, on the Internet, to the incidence of suicide (Baume et al., 1997). Such studies would likely be complicated by the global nature of the Internet, making clustering difficult to determine. Additionally, the need for users of the Internet to actively seek information on suicide is a factor differentiating it from other media forms that have been to date, overlooked by the considered literature.

There is no clear consensus on whether the introduction of the Internet will generate changes in suicide methods or result in new trends in suicidal behaviour, or whether the availability of information on the Internet will promote imitation in the way that the other media forms do (Baume et al., 1997).

Online information and suicide prevention

While Internet development has raised issues such as the proliferation of unregulated material, it has also created opportunities for innovative suicide prevention and mental health programs and information dissemination. The Internet offers health promotion a new dynamic, interactive and anonymous medium (Morrison & Sullivan, 2002). The benefits of the Internet for suicide prevention is limited by the users' ability to evaluate websites and ascertain whether the information is sound (Miller, Cugley, & Ministerial Council for Suicide Prevention, 2004).

Internet Counselling

Internet counselling is a new modality of technology that utilises the power and convenience of the Internet to allow either simultaneous or time delayed communication between an individual and a counsellor (Grohol, 2002). The following section will refer

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to Internet counselling in the form of email counselling (time delayed communication) and web counselling (simultaneous communication) (Childress, 2003). Although a growing number of cases of Internet counselling have shown positive outcomes for those with mental health problems, there is still an inadequate body of empirical research to reliably evaluate its effectiveness with people who are suicidal (Alleman, 2002).

Education and training

Education and training presents a considerable barrier to the development and current appropriateness of Internet counselling (Christensen et al., 2002). The effectiveness of counselling is largely dependent on the competencies of the counsellor to establish contact, build a relationship, communicate accurately with minimal loss or distortion, demonstrate understanding and frame empathetic responses, as well as their capacity and the availability of resources to provide appropriate and supportive information (Sanders & Rosenfield, 1998).

An online counsellor's ability to perform effective counselling is limited in an emerging area in which generally recognised standards for preparatory training do not yet exist despite initiatives to address ethical guidelines (Christensen et al., 2002). Whilst expected that those providing Internet counselling nevertheless take reasonable steps to ensure the competence of their work and to protect clients (DiBlassio et al., 2003), the absence of appropriate training in text-based communication may affect the clinical competence of online counsellors and could then result in misleading and potentially harmful effects (Childress, 2003).

Quality control

The retention of transcripts from Internet counselling encourages the highest levels of service provision and ethical behaviour (Murphy & Mitchell, 1998). These transcripts offer a mechanism for organisations to maintain and improve standards of health care delivery through their counsellors in the form of peer review and supervision that is not present in an unmonitored face-to-face session. Further, responses can be of a higher quality as the medium allows counsellors to seek advice when in doubt before sending replies to the user (Robson & Robson, 2000).

While the Internet offers a myriad of opportunities to improve delivery of mental health care and enhance the lives of users, it also brings new problems (DiBlassio et al., 2003). It is more difficult to monitor and review the qualifications of a counsellor when using the Internet than with other forms of counselling (Mittman & Cain, 1999; Robson & Robson, 2000). The potential for the counsellor to abuse the Internet user through breach of confidentiality, financial exploitation or emotional abuse is a considerable risk for users. Private counsellors may continue to dispense help that is dangerous without the restraints of ethical responsibility or significant risk of identification (Robson & Robson, 2000).

Introduction to the mental health system

Many of those in need of mental health services, are unable to receive or access professional support. Whilst largely a result of the existing demands on the mental health

system, it is suggested that currently available services may not appeal to many individuals in need of help and/or support (Christensen & Griffiths, 2003).

Internet counselling is providing another important option for many people who are unable to physically meet with mental health services or who require additional support outside of interactions with those services (Childress, 2003; Oravec, 2000).

The anonymity of Internet counselling appears to make mental health services more attractive to consumers who would not otherwise pursue face-to-face counselling (King & Moreggi, 1998). Additionally it is suggested that it is easier for a distressed person to connect to the Internet than to gather the confidence or strength to pick up the telephone and talk to someone or to make and keep an appointment in a face-to-face setting. This fosters the concept that Internet counselling can be utilised as an important stepping-stone to face-to-face counselling. It is suggested that repeated encounters that reinforce counselling as a positive experience is one of the determining factors in alleviating the anxiety of more involved help-seeking behaviour (Powell, 1998).

Writing is healing

Internet counselling also offers the benefits of writing. Writing is seen as a recursive act since as people read about the choices they are making they are actively learning more about the particular issues that concern them. Recovery has more promise when both the counsellor and the consumer are aware of the issues that need resolving (Oravec, 2000).

Many consumers of Internet counselling have expressed the benefits of being able to use transcripts to look at how far they have come and review positive and encouraging

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comments from their counsellor particularly when they are feeling down. Internet counselling also provides a written record of the ways that one recovered when they were in a similar situation, along with the coping strategies increasing the sustainability of the counselling (Murphy & Mitchell, 1998).

Timeliness

The advantages of Internet counselling in regard to timeliness are highly reliant on the benefits of writing, rather than on the immediacy of the response. Users are able to capture their immediate feelings at the time they are distressed, rather than attempt to recollect them at the time the counsellor is available as would usually be the case with face-to-face counselling. Internet counselling therefore has the potential to help to relieve someone's initial despair until alternative forms of support are accessible (Griffiths & Christensen, 2000; Murphy & Mitchell, 1998).

One issue specific to the provision of mental health services using the Internet is that of turnaround time (ISMHO, 2000). Internet counselling is a new medium in mental health care and with limited research on its effectiveness it remains an inadequately funded and under-resourced medium unable to respond to user demand. As a result the ability for online counsellors, particularly in public organisations, to provide users with appropriate response time is limited. Concern exists around the situation where someone who is suicidal exposes their feelings and is not supported by a counsellor for many hours or days. Given current resourcing levels Internet counselling is an inappropriate service for suicidal people at immediate risk.

Lack of non-verbal cues

Text based communication over the Internet appears to completely lack the non-verbal cues most mental health professionals consider an integral part of traditional therapy (King & Moreggi, 1998). Given the cognitive limitations of suicidal individuals, the potential for increased misunderstandings, projection and lack of boundaries continue to be considerable disadvantages for users of Internet counselling. This could increase the potential for destructive miscommunication and for the counselling to do more harm than good, particularly if the counsellor is not intimately familiar with the nuances of text-based communication (Alleman, 2002; Childress, 2003; Farrell & McKinnon, 2003).

Anonymity

Many people who engage in Internet counselling are attracted to it because of the anonymity it offers. Users of Internet counselling often report that it is easier to express some things over the Internet because of this anonymity and the absence of the therapist's physical presence and as a result are willing to disclose more, making the counselling more in-depth (Childress, 2003; Powell, 1998). As the interaction is less confrontational, users generally trust the counsellor more readily and are therefore more open to say what they feel or what's happening for them (Colon, 1996).

Most codes of practice in Australia support the breach of confidentiality if circumstances involve the user threatening to kill or harm someone else or themselves. The greater degree of anonymity that Internet counselling offers, whilst a strength, can also be a weakness. Internet counselling is considered isolated in the sense that the user

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and the counsellor can be geographically far apart. Counsellors are then unable to assist the anonymous user in identifying local support services without their permission and co-operation. The lack of non-verbal cues too makes negotiation with users in distress to reveal personal details increasingly difficult, limiting the counsellor's ability to respond to an emergency situation (Childress, 2003; Robson & Robson, 2000).

Hard to reach groups

Much research has found that men are more likely to seek counselling services on the Internet than in face-to-face settings (Mishara & Daigle, 2001). Research has found that the anonymity of Internet counselling appears to permit men to engage in freer dialogue about problems and feelings (Powell, 1998). Some men saw the speed of the medium more appealing than traditional forms of counselling and the lack of communication intimacy less confronting. Internet counselling also appears to have a specific ability to facilitate disclosure of suicidal ideas, particularly among males under the age of 35 years, the group with one of the highest suicide rates in Australia (Thompson, 1999).

While there are also clear benefits for rural and remote areas, the globalisation of help remains a concern. The globalisation of help is based on the assumption that with this method of counselling little cultural specificity is needed to provide help. This assumption is based on the accessibility of information and resources for any specific community being freely available from any location in the world (Mishara & Daigle, 2001). However it neglects the ethical concern of a counsellor's potential lack of awareness of location-specific conditions, events and cultural issues that impact upon

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clients resulting in inappropriate counselling interventions (Bloom, 1998; King & Moreggi, 1998). The globalisation of help also makes participating in more involved help-seeking behaviour more challenging as the Internet counsellor that the user has come to trust may not offer face-to-face counselling or may be in a different state or country. This introduces a barrier as the user then needs to share their feelings and experiences and built trust with another counsellor, a process they may not be prepared to do. This is particularly important, as Internet counselling is most beneficial when used in addition to other forms of support (Miller & Cugley, 2004).

Limited access

Equity of access to the Internet is a key concern when assessing the potential role of the Internet in suicide prevention. While some groups have benefited from the introduction of the Internet, access remains limited for those of lower socio-economic status and those with limited literacy skills (Baker et al., 2003). Users need to write their contributions and find words to represent their feelings as well as read and comprehend those from the counsellor (Grohol, 1999).

The Internet is now becoming more available in the homes of people with modest incomes and can be readily accessed in many public libraries and schools (King et al., 2003). Home access is important as it may provide more privacy and facilitate revelation of suicidal ideation or behaviour. Although computer prices have improved dramatically over time, average hardware costs and network access charges still remain out of the financial reach of millions of users (Bloom, 1998).

Internet counselling and suicide prevention

Research indicates that Internet counselling for those at high or immediate risk of suicide is not recommended. Evidence shows that Internet counselling for someone who is suicidal should be a last resort, and used only when other forms of intervention are not possible. Despite developments to enhance the communication of emotions online, available techniques remain basic and continue to be a poor substitute for face-to-face contact (Robson & Robson, 2000).

Internet counselling is most effective when used in addition to traditional therapy or as part of an aftercare plan when the person is at lower risk and therefore offers an integral role in follow up (Farrell & McKinnon, 2003; King & Moreggi, 1998). The Internet should facilitate, not act as a barrier to, care of high quality (Silberg et al., 1997).

Internet Chat Rooms

A differentiation often not made in the literature is that chat rooms can consist of either self-help groups or support groups. Self-help groups are open forums, defined by people helping one another, while support groups are small, closed moderated groups that are organised by professionals (King & Moreggi, 1998).

Social support

Internet communication provides people with an opportunity to experience a form of social contact, without a real social presence (King & Moreggi, 1998; Lewis et al., 2003). Studies on Internet chat rooms have found that the emotional support provided is

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its most significant advantage, allowing individuals to discuss feelings they may not otherwise have the opportunity to explore (Lamberg, 2003). Many users of chat rooms report that the simple recognition and validation of their feelings and empathetic support often found in chat rooms is invaluable.

The support that chat rooms offer users is largely dependent on the members currently participating in the group. There is no guarantee that interactions in chat rooms will be helpful, positive or life promoting (Grohol, 2002). The most concerning incidences are reported cases in which members have encouraged other members to complete suicide or suggested more lethal methods of suicide (Baume et al., 1997). The Internet also provides a means of communication that allows self-destructive individuals to provoke others to kill themselves and incite more dangerous or harmful methods (Suresh & Lynch, 1998), interactions that without the Internet could not be made so readily available (Haut & Morrison, 1998; Prasad & Owens, 2001). Accountability and validity on the Internet remains problematic (Henry, 1997). The responsibility for evaluating the quality and value of an Internet chat room remains an individual concern.

An important feature of the Internet is its 24-hour availability. This allows participants to log into chat rooms to connect with others and discuss whatever emotion, positive or negative, they want to share and be supported in. However, members can also experience the group as distant, and experience a removed feeling when the facilitator and other members are not present when the user is distressed (Colon & Friedman, 2003).

Some researchers argue that the use of chat rooms leads to more and better social relationships by freeing people from the constraints of geography or isolation brought on

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by stigma, illness or difficulties in coordinating interaction (Farrell & McKinnon, 2003). Others argue that the Internet is causing people to become socially isolated and cut off from genuine social relationships (Kraut et al., 1998). Some authors have expressed concern that those who are suicidal have little social support to begin with, and seeking support online will further deepen their isolation by spending hours alone in front of the computer. Research findings reported by Lamberg (2003) however, found no evidence that spending several hours a week on the Internet escalated users' social isolation.

The debate as to whether the Internet is increasing or decreasing social involvement could have significant consequences for society and for people's personal well-being as the number of people accessing chat rooms increases (Kraut et al., 1998). Social disengagement is associated with poor quality of life and diminished physical and psychological health. Research has consistently shown that when people have more social contact, they are happier and healthier, both physically and mentally (Kraut et al., 1998).

Anonymity

People who contemplate or attempt suicide are often ashamed of their feelings and find chat rooms to be non-judgemental (Lewis, Lewis, Daniels, & D'Andrea, 2003). Users are less concerned about being judged negatively by fellow members of their online group who have had similar thoughts or experiences than they would be discussing these matters off-line with friends and family who may not understand their feelings (King & Moreggi, 1998).

Content of communication

Research into Internet chat rooms found that groups focus on providing information, guidance and advice (Prasad & Owens, 2001). Most messages seen in chat rooms are of a self-disclosure type, people venting their feelings and sharing experiences and hopes (King & Moreggi, 1998). Participants often offer nurturance, sympathy, warmth and understanding to those expressing a need for support (Miller & Gergen, 1998).

It has been noted that normal constraints and rules of conversation may not exist on the Internet (Joinson, 1998). As a result people who engage online tend to feel uninhibited in many ways, which results in the revelation of intimate feelings (King & Moreggi, 1998). The sharing of one's inner feelings often results in the development of a unique bond, creating a virtual community within the chat room that supports a sense of connectedness, a key protective factor for people at risk. This can however leave the person open and vulnerable, highlighting the need for support groups to not be used in isolation.

Flaming

Disinhibition has also been seen to contribute to people feeling freer to express anger and hatred and promotes a lack of responsibility for one's words and actions. This can take the form of 'flaming', a phenomenon of Internet-based communication that has

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been defined as the uninhibited expression of remarks containing swearing, insults, name calling and hostile comments (Gackenbach, 1998).

Flaming can also result from misunderstandings. Whilst email offers the opportunity for quite rational expression, chat rooms hold a different articulation of material. Chat rooms are intimate and fast (Anthony, 2003) and the content is characteristically the product of someone typing off the top of his or her head. There is less time for thought, contemplation and reflection on how others will interpret the message (Childress, 2003). People develop the impression, over a lifetime of exposure to books and print media that written text represents the well thought-out and carefully edited views of the writer. The reader may in turn interpret chat room messages as being far more representative of the writer's firmly held thoughts and feelings than is warranted (King & Moreggi, 1998). As a result online communications can appear colder and much more impersonal than the author intended. This type of communication therefore heightens the potential for misunderstandings and can result in aggression and lack of order among chat room members (Barak, 1999).

Although flaming can be harmful in everyday situations, it is particularly dangerous in regards to suicide, in which punitive and hostile forms of communication can badly distress already vulnerable individuals.

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Professional involvement

The need for professional facilitation of chat rooms focused on suicide is paramount to avoid flaming and destructive advice (Ford, 1996; Levine et al., 1997). Frequently, self-help groups are set up as alternatives to professionally led support groups (Mittiman & Cain, 1999). The absence of an 'expert' means that there is no manipulation of the conversation to advance therapeutic ends. The risks involved in engaging with such groups are far greater and the benefits smaller (Lebow, 1998; Oravec, 2000).

Chat rooms and suicide prevention

Some authors promote the use of the chat rooms when feeling suicidal. Inasmuch as chat rooms provide important support, however, there is little evidence to suggest that they change the users beliefs of taking their life or that they assist in identifying effective coping strategies to resolve issues (Thompson, 1999). Chat room self-help groups don't have the important growth or change promoting interactions that therapists often add (Lebow, 1998).

Although a sense of virtual community is formed and people feel supported and encouraged to be strong and positive, they are often left with no new tools or skills to reframe or deal with their difficulties. Research shows that professionally managed support groups place a greater emphasis on solving problems and coping with emotions and therefore play a more useful role in suicide prevention (Lebow, 1998; Miller & Gergen, 1998).

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Conclusion

While the Internet has provided a new platform with the potential of delivering better mental health information, improved and cost effective mental health services and greater opportunities for prevention, the rapid expansion in technology has outpaced the development of standards and guidelines for Internet use (Christensen & Griffiths, 2003).

As trends suggest that the use of the Internet for health information will continue to increase exponentially the role of consumer guidelines regarding the safer use of the Internet, for information, counselling and chat rooms is paramount (Miller et al., 2004).

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Youth, Sex, and the Internet

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Abstract

For young people, the Internet is a space of both pleasure and danger. On the one hand, the Internet fosters a wide variety of social and sexual interactions, delivers responsible information and advice on sexual and reproductive health, allows the exploration of diverse sexualities, and is a means of sexual pleasure and expression. On the other hand, the Internet has facilitated young people's unwanted exposure to sexually explicit content and increased their vulnerability to forms of emotional and sexual abuse. Research by the Australia Institute finds that three-quarters of 16 and 17 year-olds have been exposed accidentally to pornographic websites, while 38 per cent of boys and two per cent of girls have deliberately accessed such sites. Much of the sexually explicit material available online, like much pornography in general, presents a narrow and distorted view of sex, shows women in sexist and stereotyped ways, and some material depicts and eroticises violence. Government regulation of the Internet has failed to keep pace with its development, and the Government thus far has done little to lessen the potential harms young people face. At the same time, the Internet is proving to be an increasingly important tool in building young people's health. To make the most of the Internet, we need to teach skills in media literacy, produce and deliver youth-focused materials on sex and relationships, and adopt regulatory strategies to minimise the harms associated with young people's exposure to sexually explicit content.

Youth. Sex. The Internet. Each of these three is a site of enormous social change, an area of social policy, and at times, the subject of moral panics and media frenzies. And all three are linked to another issue which also has been the subject of great controversy, pornography. Australian research documents that it is child's play to see pornography on the Internet. Some young people deliberately seek sexually explicit materials online, while many experience routine, accidental exposure to pornography. This exposure is likely to have damaging consequences for young people's mental health. Social and educational strategies will be most effective at minimising the harms associated with exposure to pornography, while regulatory strategies also are desirable.

Youth, Sex, and Media

Cultural anxieties have been articulated in recent decades about a range of issues relating to youth and sexuality, from premarital sex and teenage pregnancy to child abuse and the premature sexualisation of girls. Such fears also have deep historical roots (Heins 2001). While adolescent sexuality is often seen as undesirable, deviant or risky, moral panics about young people's sexual activity fail to acknowledge that most young people move into adulthood as healthy and responsible sexual beings (Roker & Coleman 1998: 1). At the same time, as Levine (2002: xxxiii) notes, 'Sex among [Australia's] youths, like sex among its adults, is too often neither gender-egalitarian, nor pleasurable, nor safe.'

The mass media plays a powerful role in the socialisation of children and adolescents (Goldman 2000), and it may be particularly important in shaping young people's sexual knowledge, attitudes, and behaviours given their limited access to other

sources of sexual information. Parents communicate about sexuality-related topics only with difficulty, while school sexuality education often focuses on biology and neglects sexual behaviour, romance and interpersonal relations. Youth are thus forced to rely largely on peers and mass media. Today's children grow up in a cultural environment saturated with sexual imagery and popular sexual discussion, and their exposure to Internet pornography in particular has become an issue of substantial public concern.

For young people, the Internet is a space of both pleasure and danger. On the one hand, the Internet fosters a wide variety of social and sexual interactions, delivers responsible information and advice on sexual and reproductive health, allows the exploration of diverse sexualities, and is a means of sexual pleasure and expression. Young people use the Internet to build both online and offline relationships and communities. More widely, the Internet is an extraordinarily valuable, and indeed essential, educational tool for children and young people.

On the other hand, the Internet brings some dangers. The Internet is a new medium for old forms of emotional and sexual child abuse, including the recruitment of children for sexual purposes, child pornography, and the commercial exploitation of children through online advertising (Stanley, 2001). In addition, exposure to Internet pornography (and other problematic materials) can foster poor mental and social health. This is the focus of the remainder of this discussion.

Paths to Exposure to Pornography

Pornography can be defined as 'sexually explicit media that are primarily intended to sexually arouse the audience'. It includes images of female or male nudity or

semi-nudity, implied sexual activity, and actual sexual activity. 'Pornography' is used here as a neutral term, rather than as a negative term referring to representations which are necessarily offensive, obscene, or harmful.

How are children and young people exposed to pornography? First, children may deliberately seek sexually explicit materials. They do this for reasons which overlap with those of adults: curiosity, interest in sexual and reproductive health, interest in information which may benefit their interpersonal relations, and a desire for sexual stimulation. On the Internet, minors may search for sexually explicit material using a search engine, go to a particular web site, use a chat room, or sign up to a sexual mailing list. Second, young people are exposed to pornography accidentally (Thornburgh & Lin 2002). On the Internet, it is easy for children and indeed all Internet users inadvertently to encounter pornography.

According to Australian law, individuals under 18 years cannot purchase or view R- and X-rated films and publications, and neither children nor adults can view 'Refused Classification' materials. But on the Internet, it is child's play to see sexually explicit materials. This is because of three distinct characteristics of Internet pornography.

First, pornography is available free in mammoth quantities. Commercial websites routinely include free images and tours to entice people to subscribe, while the Internet also hosts large collections of free pornographic images and movies. While children have sought out sexual material for a long time, the Internet makes doing so easier, faster, and more anonymous (Strasburger & Wilson 2002). A curious child can type in sexual words in a search engine and will be given a list of literally millions of sites in response. Age and lack of money may prevent children from gaining access to pornographic films and

magazines. Yet they can spend hours wandering online through a vast collection of free images and video clips.

Second, there are virtually no age-related barriers to access. Three-quarters of commercial pornographic websites display sexually explicit content on the first page, where anyone can access it. While one-third of such websites state that the viewer is entering an 'adult' site, they do not actually prevent minors from entering. Some websites require that the viewer prove they are an adult, using either a credit card number or programs such as 'Adult Check'. However, very few commercial sites require these to proceed past the first page of the site; most allow the user to take a 'free preview' (Thornburgh & Lin 2002).

Third, Internet pornography has an indiscriminate and sometimes coercive relationship to potential consumers. Individuals viewing 'softcore' websites may be subject to unsolicited 'pop-up' windows, advertising and offering links to other pornographic websites. Adult websites often use the method of 'mouse trapping' where the user is forwarded involuntarily to another site. And children and adults receive unsolicited e-mails or 'spam' promoting pornographic websites or sending images themselves.

Australian Youth's Exposure to Online Pornography

There is now Australian data on young people's exposure to pornography. The Australia Institute, a public interest think-tank, commissioned a telephone survey among a representative sample of 200 respondents aged 16 to 17 years regarding their exposure

to pornography, producing two reports in 2003. Youths younger than 16 could not be interviewed for ethical reasons. While the survey produced data also on exposure to X-rated videos, I omit this here.

Eighty-four per cent of boys and 60 per cent of girls say they have been exposed accidentally to sex sites on the Internet. Nearly two in five 16-17 year-old boys (38 per cent) have searched the Internet for sex sites. Only four per cent say they use the Internet for this purpose on a weekly basis, but over one fifth of boys access Internet sex sites at least every two or three months. Nearly nine out of ten 16-17 year-old boys (88 per cent) believe that looking at sex sites on the Internet is widespread among boys of the same age. Among girls, only two per cent say that they have deliberately sought out Internet sex sites and all of those have done so only very occasionally. Among 16-17 year-old girls, only seven per cent believe that looking at sex sites on the Internet is widespread among girls.

The figure of two per cent of girls who have deliberately sought out sex sites stands in stark contrast to the 60 per cent of girls who have been accidentally exposed. Internet users who have no interest in sex sites thus find it difficult to avoid them.

What Young People May See Online

When a boy or girl views a pornographic website, what are they likely to see? While the Australia Institute survey did not gather data directly on the nature of the materials seen, it is worth noting the typical features of pornographic content.

Pornography's content ranges from images of female or male nudity or semi-nudity to explicit depictions of sexual acts. Most of pornography's images are of women or of male-female sex, and most pornographic imagery is directed at heterosexual male viewers. Pornography includes typical genres or clusters of content. These include 'teens', anal intercourse, fellatio, male ejaculation, 'amateur' participants, breasts, buttocks, 'lesbian' sex, lingerie, gay male sex, Asian and black women, multiple male partners, bondage, and many other categories (Flood & Hamilton, 2003a). Most pornography presents a narrow view of sex and sexuality. In mass-marketed heterosexual pornography,

“sex is divorced from intimacy, loving affection, and human connection; all women are constantly available for sex and have insatiable sexual appetites; and all women are sexually satisfied by whatever the men in the film do.” (Jensen & Dines, 1998: 72)

Themes of sexual violence are well documented in the images circulated on Internet newsgroups and on some websites. Some websites centre on violence, subordination and degradation, while many use derogatory and hostile language in describing the women depicted. There are three genres of pornography which are non-consenting by definition: (1) 'rape' websites claiming to show images of women being raped and depicting sexual torture, abuse and pain; (2) 'upskirts' and 'peeping Tom' genres centred on images taken illicitly of women; and (3) images of bestiality (Flood & Hamilton, 2003a).

Effects of Exposure to Pornography

What is the likely effect of exposure to pornography on youth's attitudes, values, and behaviours? There is very little direct evidence among youth under 18, because of the obvious ethical difficulties involved. However, there is a literature on the effects of sexualised media content (e.g., in television programs or music videos). It finds that adolescents exposed to sexual content show a greater acceptance of pre-, extra-, non-marital and recreational sexual relations, greater factual knowledge, and an increased belief that their peers are sexually active (Flood & Hamilton 2003a). In addition, numerous studies on pornography have been conducted among young adults aged 18 to 25, with many focused on the potential link between pornography and sexual violence.

Across these studies, there is consistent and reliable evidence that exposure to pornography is related to male sexual aggression against women. This association is strongest for violent pornography and still reliable for nonviolent pornography, particularly when used frequently. In experimental studies, adults show significant strengthening of attitudes supportive of sexual aggression following exposure to pornography. Exposure to sexually violent material increases male viewers' acceptance of rape myths and erodes their empathy for victims of violence. Some experimental studies test changes in behaviour: they find that adults also show an increase in behavioural aggression following exposure to pornography, again especially violent pornography. In everyday life, men who use hardcore or violent pornography, and men who are high-frequency users of pornography, are significantly more likely than others to report that they would rape or sexually harass a woman if they knew they could get away with it. There is a circular relationship among some men between sexual violence and

pornography, in that men who are higher risk of perpetrating sexual aggression are more likely to be attracted to and aroused by sexually violent media and may be more likely to be influenced by them (Malamuth, Addison, & Koss 2000)

It is likely that similar relationships between some forms of pornography and sexual aggression exist among teenagers. This association may be particularly strong for the five per cent of 16 and 17-year-old boys in the Australia Institute study who view Internet sex sites and watch X-rated videos every week. Regular consumption of pornography, and particularly violent pornography, is a risk factor for boys' and young men's perpetration of sexual assault. More generally, pornography may help to teach young people sexist and unhealthy notions of sex and relationships.

There have been heated scholarly and political debates over pornography. For anti-pornography feminist writers, pornography sexualises and normalises inequalities and 'makes violence sexy' (Russo 1998). Other feminist and non-feminist authors argue that there is great diversity in pornographic imagery, viewers interpret pornography in complex ways, and claims about media 'effects' are simplistic and overly deterministic (Strossen, 1995). Certainly there are three caveats to my argument here. First, various factors mediate the impact of exposure of pornography, such as the viewer's age, personal development, and their level and nature of sexual experience. Second, sexist and violent pornography is not the sole determinant of men's violence against women, and sexual assault is shaped by multiple social and cultural factors. Third, pornography is not the only important source of sexist and violence-supportive attitudes in our culture.

It has been argued too that pornography can have *positive* effects and meanings. While pornography does exaggerate sexism, it has also challenged sexual repression and

restrictive sexual norms and thus benefited women. In addition, gay and lesbian pornographies are important positive expressions of non-heterosexual sexualities. But these positive effects should not blind us to other, harmful, effects associated with pornography.

There are three other potential impacts on children and young people of exposure to pornography that should also be considered (Flood & Hamilton 2003a). First, younger children may be shocked, disturbed or upset by premature or inadvertent encounters with sexually explicit content. Second, young people may be troubled or disgusted by images of non-mainstream sexual behaviours. Like adults, they may be disturbed by images of practices which are outside common cultural norms, such as sex involving multiple partners, bondage and sadomasochism, urination and defecation, bestiality, incest, or rape.

Finally, young people exposed to images of non-mainstream sexual behaviours may be more likely to accept and adopt them. There is one version of this argument that should be rejected, the notion of the 'recruitment' of children into homosexuality. There is no evidence that being exposed to sexually explicit materials can change a person's overall sexual orientation. On the other hand, exposure to pornography *can* influence attitudes towards particular sexual behaviours. When adults engage in prolonged consumption of pornography showing non-mainstream sexual practices, their estimation of the prevalence of such practices in the population increases. Of course, this is only a problem if these practices are undesirable in some way, and there is substantial debate over the moral status of different sexualities. Nevertheless, it is safe to say that there is

likely to be a community consensus on children's exposure for example to depictions of violent or non-consenting sex, while more disagreement is likely on other material.

To summarise, pornography is a poor sex educator. Most pornography is too explicit for younger children, most shows sex in unrealistic ways and neglects intimacy and romance, and some pornography is sexist or even violent.

What To Do

So what can be done about this? On the one hand, it is unfair for responsibility for the problem to be placed only on parents' shoulders. We do not broadcast explicit sex or extreme violence on television at all hours and leave it up to parents to regulate. Nor does our regulatory system allow minors to gain access to X-rated videos. On the other hand, it would be inadvisable to seek to prevent access to pornography altogether, whether by children or adults. First, it is very difficult to mount a defensible intellectual or political argument against *all* sexually explicit depictions. Second, pornography is consumed by substantial proportions of the Australian adult population. In the last year, about one-quarter watched an X-rated film and ten percent visited an Internet sex site on purpose (Richters *et al.* 2003). Third, there is majority community support for adults' right to access X-rated materials, as a series of Australian surveys have found.

Rather than trying to ban pornography, we should be seeking to minimise children's exposure to pornography, both accidental and deliberate; minimise the harmful effects of exposure among children when it does occur; and minimise exposure to violent pornography among children and adults alike. The second report by the Australia

Institute proposed a strategy with three components: schools-based education, a national system of Internet filtering, and a more responsible online adult industry (Flood & Hamilton 2003b).

Social and educational strategies

Social and educational strategies are the most effective ones we have to minimise the harms associated with children's exposure to pornography. Three kinds of educational strategy are important: (1) teaching children media literacy and skills in critical analysis of media messages; (2) parental understanding and monitoring; and (3) providing alternative content on sexuality to young people – content that is compelling and educational, and which includes materials on sex and relationships. Such strategies encourage children's ethical development and resilience, they are more effective than technological solutions in the long term, and they minimise the negative effects of exposure when it does occur.

Regulatory strategies

Filters are currently the most popular means of protecting children from exposure to inappropriate material on the Internet. The simplest filters use 'black lists' of inappropriate content or 'white lists' of appropriate content, keywords, and lists of suspect web sites, while more sophisticated filters analyse the text and images on particular web pages. The Federal Government has relied on voluntary filtering by end-users as the main means to minimise children's exposure, but this system clearly is not working.

A more effective method of restricting children's exposure to pornographic web sites is to require all Australian Internet Service Providers (ISPs) to apply filters to all content. Adults could 'opt out' of filtering to receive X-rated and other content. ISPs would be permitted to host pornographic websites on condition that the content had received an X rating and that effective age verification methods were in place. This would represent a system very similar to the one that now regulates X-rated videos. Several objections been raised to this to this proposal. First, internet industry advocates have claimed that a national system of ISP-based filtering is not technologically feasible.

However, the government's own review in 2004 reported that a national filtering system based on blacklists or whitelists certainly is feasible, and would not increase computer response times. The use of more complex filtering technologies is not practical, but will be feasible in a national system by 2006. A fallback option is that ISPs offer default end-user filtering on an opt-out basis. Subscription to an ISP automatically would include an end-user filter, installed on the user's computer, and users could choose not to accept it. An end-user system would allow more sophisticated filtering technologies to be used, and computer users could determine the kinds of content they or their children can see.

A second issue is that the classification of pornographic content is time-consuming and expensive, and it would be not practicable in relation to the enormous volume of adult content on the Internet. One alternative is a site license system. Australian web sites can get a license to host pornography, they must abide by the Office

of Film and Literature Classification guidelines, they are subject to periodic checks, and breaches mean that their license is suspended or revoked.

Critics of filtering point out that all filtering technologies ‘overblock’ legitimate materials and ‘underblock’ inappropriate materials. Filters have blocked materials on breast cancer, contraception, feminism, and so on. Some filters are ineffective, some are based on religious or other criteria that are not obvious to the user, and filters can be circumvented. Any filtering technology must live up to at least the following criteria: (a) effectiveness, (b) transparency, and (c) privacy (in protecting users’ rights to political expression and debate). Finally, filters can be bypassed by peer-to-peer file-sharing. Other strategies are required to address the potential harms associated with youth’s participation in these networks.

A more responsible online adult industry

Finally, the online adult industry must become more responsible. It should adopt further measures to limit minor’s exposure (both accidental and deliberate) to X-rated materials, including stronger age-verification technology, ‘plain brown wrappers’ for Internet sex sites, and instant help functions for children exposed to offensive material.

Conclusion

Substantial proportions of Australian youth are viewing Internet pornography, both accidentally and deliberately. There are two reasons to think that this exposure to pornography may increase. Children are using the Internet at increasingly younger ages and more frequently. And new channels of exposure to pornography are opening up to children and adults alike, particularly through web-enabled mobile phones, personal digital assistants, and game consoles. On the other hand, parents have increased their efforts to minimise children's exposure to inappropriate Internet content, through both filtering software and supervision and monitoring (NetRatings Australia 2005: 57-66). The Internet is an extraordinarily powerful educational tool, to which all youth need access. We must take steps to minimise the potential risks of Internet participation. At the same time, protecting youth from sexual harm does not mean 'protecting' them from sexuality in general. In fact, maintaining children's sexual ignorance contributes to poor mental and sexual health. We must foster, and indeed, celebrate, the many ways in which the Internet is a tool for building psychosocial health.

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Cartwright, M. & McDermott, B. (2009). Developing a Child and Youth Mental Health Service Website, Pitfalls and Practicalities: Project Managing in Cyberspace. *Counselling, Psychotherapy, and Health*, 5(1), The Use of Technology in Mental Health Special Issue, 148-170.



Developing a Child and Youth Mental Health Service Website, Pitfalls and Practicalities: Project Managing in Cyberspace

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Abstract

The internet and email are powerful ways of reaching young people and decreasing barriers in accessing mental health services. The following article reviews how one agency developed their own cyberspace presence to aid in the delivery of information and service to children and youth. Cost, quality, and management are all presented and highlight the practicalities involved in creating a youth internet presence.

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Introduction

The internet is the fastest growing technology in the world. The internet and e-mail are potentially powerful new ways of reaching young people and decreasing barriers in accessing mental health services (Cartwright, Gibbon, McDermott, & Bor, 2005). 79% of Australian households with children under the age of 15 have access to a computer with 59% having access to the internet (ABS, 2003a). In 2003, total Australian internet subscribers numbered over 5.2 million and continues to grow (ABS, 2003b). Worldwide it is estimated there are 729 million internet users (Global Reach, 2004). Recent data also suggests that health is one of the most common reason for using the Internet (Powell & Clarke, 2002). It is recognised that the Internet allows individuals a sense of control over their own health. In the area of mental health there has been a proliferation of information websites, self-help groups, web counselling services and professional mediated support groups. Some of these services demonstrate effectiveness in dealing with depression and other mental health disorders (Christensen, Griffiths, & Groves, 2003).

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There is growing recognition of the importance of the Internet in public health and prevention messages and the improvement in mental health literacy. The potential effectiveness of health promotion and prevention information favourably compares with other media due to increased accessibility and relatively small cost. Transfer of information can be universal or targeted. The ability of the Internet to support databases that store information about users allows a regular and specific information exchange. Growth of the Internet has enormous potential for facilitating the development of mental health in the community and allowing mental health programs to be accessible to many who do not seek or cannot access professional treatment. (Christensen, Griffiths, & Groves, 2003). Examples of popular mental health portals include www.helpnet.com and www.psychcentral.com. This popularity is probably in part because the Internet provides a safe, non-threatening and anonymous medium to assist people access help and information (Yellowlees, 2001). However, mental health websites require more scientific evaluation to ensure quality of information (Griffiths, & Christensen, 2000).

The purpose of this chapter is to describe practical, organisational and project management considerations in developing a mental health website, the lessons learned, research findings, and discussion about future implications for using the internet in child and youth mental health.

Background to the "Kids in Mind" Website

The burden of child and youth mental ill-health is not insignificant. The Australian National Survey of Mental Health and Well-Being reported 14% of children

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and young people in Australia have mental health problems of whom only 7% of young people who could benefit from a mental health intervention actually access a service (Sawyer, Kosky, Graetz, Arney, Zubrick, & Baghurst, 2000). Many youth do not access mental health services due to lack knowledge, fear and uncertainty (Urbis, Keys, & Young, 2003). Our own survey of youth and adult consumer perceptions and internet use found that accessing online information was considered a safe and acceptable way to promote understanding about mental health and local services and online information was likely to reduce feelings of isolation, increase levels of support, reduce anxieties and increase their willingness to access help (manuscript in preparation). This is consistent with research by Kids Helpline (2001) identifying mental health issues as the second highest reason for online counselling. Further, young people were three times more likely to make contact online than through telephone to discuss mental health issues (Kids Help Line Online, 2003).

The “Kids in Mind” website (www.kidsinmind.org.au) is the internet site of the Mater Child and Youth Mental Health Services (Mater CYMHS). Mater CYMHS is a large metropolitan service located in Brisbane, Queensland, with approximately 200 staff, servicing an estimated population of 415, 000, of which 124, 000 are aged (0-18) years. The service provides inpatient, day program, consultation-liaison and community clinic services. The service also manages a youth alcohol and substance residential withdrawal service and more specialised clinical initiatives such as an infant mental health team, multi-systemic therapy team and a research unit. Mater CYMHS has complex inter-sectoral relationships than many other clinical areas and include regular interactions with providers of education, welfare, disabilities, juvenile justice and primary health care.

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Mater CYMHS leadership acknowledged child and youth mental health internet information is an area that required both development and evaluation. Most mental health sites are adult orientated and lack specific relevance to Australian youth. In 2000, Mater CYMHS had rapidly expanded introducing new services and programs. Organisationally, the need for improved communication had increased. Advances in technology, and the Internet provide potential solutions to meet the information needs of staff, referrers and consumers. The primary objectives of the "Kids in Mind" website was to link people to community services, enhance access in high risk and marginalised groups, enhance partnerships with key stakeholders, improve communication and to research the effectiveness of the website.

Website Design, Content and Branding

Designing the website involved consultation with consumers, staff and web designers. This process shaped content, layout, design, technical specifications and functionality. The overall look and feel of the site was crucial and constrained by organisational policies, technical skills, budget, time and target audience. The design aim was to achieve a consistent user experience (CUE) across all site sections. The CUE improves site navigation, searchability and encourages return site visits thus improving search engine ranking and the needs of the site user. The application of a Content Management Systems (CMS) provided the backend structure to support the graphic design, CUE and site maintenance.

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A CMS offers a sustainable and cost effective solution to maintaining and updating your own website. CMS are widely available and vary in cost. Owning the CMS liberates the organisation from the middle man allowing real-time changes to content. Kids in Mind operates a robust customisable CMS with a proven history of effectiveness in a large government department. Learning the system required minimal training, and can be managed from anywhere via the internet.

Navigating the site needed to be quick using a dial up modem. Speed was important when downloading content and opening web pages. Page scrolling was limited, clear menu pathways were structured and use of graphics were used appropriately

The graphic design was constrained by corporate branding. Graphic design and illustrations in the “Kids in Mind” website reflected the local community experience. The web design accommodates user groups such as children, youth, parents, staff, researchers, professionals and the community. The design layout promotes choice in searching the site from multiple sections. Use of illustration, multimedia, photos, art galleries, stories, games, newsletters resources, web links, frequently asked questions and contact information provides consumer choice. Interactive functions such as an opinion poll and e-mail feedback tool ensures consumers have the ability to make contact and receive information or be directed to help. The graphic elements were taken one-step further by ensuring that online designs and resources were suitable for use offline such as organisational publications, brochures, reports, posters and CD ROM. Using these assets reduced ongoing costs and promoted Kids in Mind as an organisation with a credible brand name.

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Marketing and naming a website is crucial and in our case successful. It was important that the domain name (kidsinmind.org.au) reflected the business and keyword search terms used by internet users. Naming the website was consultative. The web address was submitted to numerous search engine directories and site linking with credible sites actively sought and reciprocal linking encouraged. Marketing the website has been successful with little resources and requiring minimal effort. The strategy included a ministerial launch, media releases, branding all verbal and written communication with the Kids in Mind brand-name and web address and advertising to key stakeholder groups. Maintaining a web presence has been enhanced by registering Kids in Mind as a registered business, advertising private programs and services such as Kids in Mind Training, Consulting and Kids in Mind Research.

Project Management

If you fail to plan, you plan to fail. Project management provided the platform for driving the change required. By definition, project management is the application of knowledge, skills, tools, and techniques to project activities in order to meet project requirements (Project Management Institute, 2000). The introduction of a service website involved change in perceptions, attitudes and communication.

Development of the "Kids in Mind" website was time-limited, involved numerous people, a moderate degree of uncertainty and was managed integrating best practice in project management. The project followed a typical project management approach and project lifecycle consisting of initiating, planning, executing, controlling and closing

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phases. Within these phases functions such as: scope, quality, time, cost, communication, human resources, risk and procurement were managed and are discussed in more detail.

Website Scoping

Scoping the project was a considerable and lengthy task. Scoping processes include: initiation, planning, definition, verification, and change controls. The project was staged with the implementation phase requiring 6 months from acceptance of tender. Within the scope was: project management, partner selection, website content development, content management system and web design. Out of scope, without precluding topics for future projects, was provision of online medical advice, online assessment, counselling, treatment, in house hosting, provision for e-commerce, state-wide marketing, recruitment of ambassadors and publication of research.

The scoping process consisted of focus groups and of use of 4 surveys with staff and consumers. Free field and multiple response fixed data were obtained. The voluntary surveys involved newly registered clients and existing staff. The analysed data provided structure to the website design and its content. With limited experience and few similar service websites to guide our decisions managing the scope was a considerable risk. A close project team, constant reviews utilising web design consultants and a collaborative project plan assisted in preventing scope blow out.

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Website Schedule Management

Designing websites depends greatly on your audience, your budget, time, the complexity of the design and the amount of content. The schedule was managed by applying processes such as activity definition, sequencing and duration, as well as estimating schedules and control measures. Achieving the objectives on time was critical in determining the websites success along with capability, cost and quality.

The website took nearly 2 years from its inception to go live. This project was constrained with a rapidly growing service and competing everyday service demands. Many healthcare projects are undertaken as operational work and this project was no different. As an NGO with financial constraints there were pressures on staff, however we were able to capitalise on staff motivation.

The most important scheduling tool was the human factor of estimating good time management and keeping people to schedules. Scheduled flexibility (project padding) was built into the project to account for our inexperience and unforeseen organisational developments. Our organisation and the web designer used dedicated project managers to oversee the schedule. Microsoft Project 2002 software was used to schedule, analyse critical paths, outline milestones and control time. However, it was only a tool to aid work completion.

In developing website content the service utilised specialist staff, including a speech and language pathologist who checked language suitability for children. A web publishing editor was contracted for more editorial support. All content went through an extensive evaluation process. A set of web publishing guidelines were developed to

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support staff. The guidelines were influenced by commercial and non-commercial web publishing guidelines accessible via the World Wide Web.

Website Cost

Website development and maintenance can be costly. Cost, always a major constraint was managed through resource planning, cost estimating, budgeting and control. A fixed budget was allocated for website set up and maintenance costs were absorbed into recurrent operational budgets. Limited web design expertise was balanced by infrastructure to support the development and maintenance. If the organisation does not have the expertise in developing websites this risk must be managed accordingly.

Managing the budget was a critical factor to success. The web designer provided opportunities to make progress payments and this was helpful. The fixed cost contract provided additional security. Major risks with information technology projects are that costs and time can easily exceed initial expectations. Actual project costs accounted for web designer fees and initial web hosting. Other organisational costs, such as project management, executive support and development of content were not tracked and were absorbed into operational budgets. Developing content in a large organisation is more cost effective than in a smaller organisation. True project costs would have been considerable. Tracking these costs in our circumstance was not required but nevertheless is important.

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Making changes in the project has predictable budget implications: changes in the implementation and finalisation stages are expensive. This is where designers make considerable profit at the expense of poor planning and scope management. Negotiate the cost of scope change from the outset and be aware of maintenance contracts. The combination of designer and in-house approach provided a sustainable and positive cost benefit. The project was brought in on budget. A sustainability plan outlined provisions for ongoing financial funding through commercial, government, non-government and trust foundations.

Website Quality

Mater CYMHS is an accredited healthcare provider operating an internal quality management program. The website incorporated best practice guidelines, needs of stakeholders, policies, legislation and standards where relevant for the output of the project. Integral to quality planning, assurance and control of this project, measures were undertaken to ensure agreed expectations and standards compliance. Table 1 provides a summary of relevant standards and legislation. Recognised experts and professionals were utilised to measure and oversee compliance to the content evidence base, information technology and project management standards. Legal advice was sought to protect the organisation from claims made against the service.

Project quality was driven by consumer and staff expectations. Issues such as design and site usability, ease of navigation, speed of web page loading, cross browser compatibility, branding, consistent user experiences and simple clear information were

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deemed important. Accessibility, site feedback and contact details were also important site functions as well as having information written specifically for the intended audience.

Issues important in achieving a quality mental health website include managing change, organisational culture, stakeholder expectations, gaining consumer input, selecting the right partner and project team. Other relevant project issues include managing the schedule, risks, communication and human resources. The “Kids in Mind” website has been recognised with national and international awards underlining the benefits of the quality process.

Website Human Resource Management

Developing the website required acquisition, development, and management of human resources. The project involved change in attitudes, behaviours and has potential to impact future clinical care. Multidisciplinary and intersectoral teams contributed in varying ways. All staff were invited to participate. Professional development was provided to assist in implementation as well as accommodate changes throughout the project and to sustain the website following completion. This strategy was consultative, participative and addressed issues such as succession planning.

Team performance was critical to the websites success. Roles and responsibilities were clearly articulated and shared within and outside our organisation. Recruitment of external staff adhered to procurement constraints. Importantly, human resource management was about managing expectations, change, selecting and informing the right

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people and ensuring that allocated work was done in time. This was an issue for those staff with operational responsibilities that had competing and higher priorities. Sustaining the project beyond the initial scope required the development of a website editing group to maintain the website.

Website Communication Management

Communicating and translating healthcare information to an external IT company presented considerable challenge. Communicating our vision into content, design and navigation was a developmental process. Communication provided a critical link between the project, people, ideas and information at all stages in the project.

A major communication aim was to translate our ideas and vision into a product that provided a long term solution. Extensive stakeholder consultation was crucial; matching their needs and translating this into specific website content required considerable effort.

A communication plan assisted the change required and ensured timely and appropriate generation, collection, dissemination and storage of project information. This occurred via formal structures and processes aiding decision making, and the control of informal communication networks to achieve the website objectives.

Building trust and a long-term relationship with the web designer was important for possible future partnerships. Key features of the communication plan included: a ministerial launch, media plan and advertising schedule, public relations and promotional

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activities, budget, issues management, risk management, stakeholder communication, change approval process, reporting, HRM, procurement and quality management.

Working with an external partner was positive. This was assisted by their human services background, understanding of bureaucracy, the scope of this project and the fee for service structure. Choosing a partner that can translate technical jargon into plain English was most helpful. Typically, most large organisations experience difficulties in communication processes across business units and we were no exception.

Website Risk Management

Australian risk management guidelines in conjunction with policy, legislation and stakeholder input were applied to this project. We had limited organisational information technology assets and staff attitudes were varied. An overall assessment of the project risk was categorised as medium. Examples of risks included: raised service exposure and community expectations, increased referral demand, partner selection and dissonance, large scope and resources needed to achieve tasks, change and communication, usability of the website and its look and feel for each audience (children, youth, parents and carers, clinicians, researchers). Risks also included mismatch between expectations and delivered product from service and consumer perspective and the acquisition of robust and sustainable technology for maintenance and succession planning.

The main lesson to reduce risk is to clearly define the scope, choose the right web designer partner and manage risk continuously through consultation performance reporting and evaluation.

Website Procurement Management

Designing the website was constrained by typical contract management protocols. Based on a “make or buy” analysis a web designer and hosting company was procured. It was more economical to buy in expertise, than to develop the skills and host the website internally.

Web designer selection was undertaken through a closed tender process. Product demonstrations, weighted selection criteria, referee reports including their capability to provide future solutions to sustain potential growth were assessed. To assist this process and reduce risk an independent selection consultant was contracted. Performance monitoring was integrated throughout the project schedule.

The lessons learned in procurement throughout this project have been positive. We received more than we anticipated. This is probably unlikely to be the case in most situations. This project was unique and presented an opportunity to both organisations. Caution must be used if making changes to contracts. Consult your contract management team or lawyer. If you change your mind and need additional resources, this can be expensive and cause delays. Know the cost of changing the scope up front and beware of maintenance contracts, upgrade costs, and ongoing website hosting.

Procurement constraints between internal business units can be problematic. In hindsight, mitigating contract management and finance issues are likely to be helpful if procurement and finance departments are included in preliminary planning and discussions before going to tender. A greater understanding of procurement processes and partner-client business skills were lessons learned that had benefit beyond the life of the project. Caution must be used if making changes to contracts. Consult your contract

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management team or lawyer. Establishing working relationships with your organisations contract management team or lawyer are advisable.

Website Evaluation

The project was evaluated against performance criteria and standards outlined in the project plan. The evaluation methodology included monitoring site traffic, multisite testing, cross browser testing, consumer and staff focus groups, consultations and meetings. Qualitative and quantitative consumer website feedback has been positive. In general, online feedback has been related to clinical or access issues. Staff feedback has also been positive, however, staff website use has been lower than consumer use. This in part is explained by site access difficulties experienced by non-campus community clinic staff. The website has been relatively free of downtime, with scheduled server maintenance conducted in low end-user periods. Data collection methods via the World Wide Web have limitations in terms of how statistical data is collected and analysed. Data from the web hosting company and CMS database have been analysed. Site traffic trends for the 12 month period 2003-2004 are outlined in Figure 1. Site usage has steadily increased with adolescent drug and alcohol withdrawal information being a highly accessed area.

The next stage of the website is to undertake more formal evaluation of consumer and staff use, site traffic trends, site feedback, cost effectiveness and impact on community awareness and access issues.

Discussion

Evidence suggests that consumers utilise online mental health information and access professionals via the internet. There is potential for providing high quality information to consumers and e-mail access to staff. Given that increasing numbers of Australians are accessing a more affordable internet using permanent broadband methods (NOftIE, 2003) this form of help seeking behaviour will potentially grow. Contemporary and emerging technologies include broadband connectivity to the home offering more advanced interactive services such as high speed videoconferencing, wireless communication technologies, voice over internet protocol, wireless technology and virtual reality. Consumer access to their electronic record is occurring in many countries. Assessment, consultations and treatment seem likely to continue in traditional face-to-face modalities but may be augmented via the internet, and clinicians will have increasing access to health information via the internet (McLaren, Yellowlees, & Wootton, 2003). This is complimentary to workforce changes, investment into ongoing training of health workforce in technological advances, ongoing evaluation of health outcome potential and cost benefit of emerging technologies (A vision for the future, 2002). Further research into technology and mental health requires a stronger evidence base (McLaren, Yellowlees, & Wootton, 2003).

Developing and sustaining a mental health service website requires collaboration between consumers, services and inter-sectoral agencies. It is likely that many clinicians have more limited information technology skills, insufficient to neither build and maintain websites, nor have undergraduate courses adequately prepared clinicians to do this. However, health related courses do value the capacity of technology with more

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courses integrating technology into curriculum design and delivery. Other barriers include funding and cost constraints, ethical including privacy issues in the new cyberspace medium, staff attitudes, acceptance, fears and time to provide content and expertise, and the early state of evidence-based practice using new technologies. However, the benefits to the service and consumers seem clear with benefits in the broad areas of access improvement, greater access to information, improved communication and potentially improved mental health literacy and broader treatment options.

In conclusion, developing the “Kids in Mind” website has been positive for consumers and staff. This website provides a platform to support new service models targeting young people and carers in the future. The website provides a virtual front door for consumers and a forum for sharing information in a safe, accessible and cost effective environment. Considerable work is required to progress the development of internet child and youth mental health information and services. Such a project will usually extend the mental health service provider in areas of service organisation, legal and financial practise, areas that were previously either unnecessary or areas of relative weakness. Acquiring these skills provides benefits beyond the scope of a website development project. Considerable potential exists to improve youth access to mental health services using internet based technologies. Further research into the benefits of “Kids in Mind” website and other online mental health websites is required, including our current research into staff attitudes, behaviour and uptake of technology in clinical practice.

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Tables and Figures

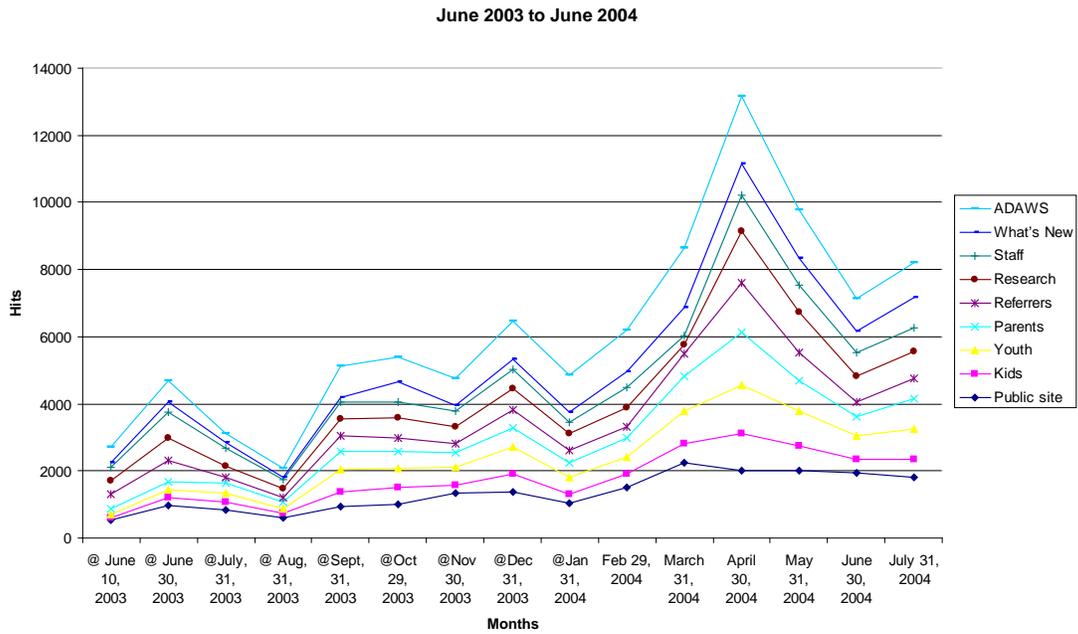
Table 1 Quality standards and legislation^a

NOIE Guide to Minimum Website Standards 2003
Australian Government Information Management Office-Better Practice in Online Service Delivery
Health Insite web publishing standards
Health on the Net standards (HONcode)
W3C standards for Federal and ACT
Australian Communication Security Instructions-33
Privacy Guidelines
Australian Government Locator Service (AGLS)
E – permanence standard for electronic record keeping
Australian/ New Zealand Risk Management Standards
FaCS (ICT) Strategic plan 2000-2007
National Health Information Standards Plan for Australia 2001
Australian Council on Health Care Standards
Project Management Institute Standards
International Society of Mental Health Online (ISMHO)
Mater CYMHS consumer needs analysis

^a References available on request

Figure 1 Hits per month by section over the first 12 months period of Kids in Mind being live.

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Table 2 Session visits over the first 12 months period of Kids in Mind being live.

*** Go Live**

Website Community	*Month	Month												
	Jun 10, 2003	Jun 30, 2003	Jul 31, 2003	Aug 31, 2003	Sep 30, 2003	Oct 29, 2003	Nov 30, 2003	Dec 31, 2003	Jan 31, 2004	Feb 29, 2004	Mar 31, 2004	Apr 30, 2004	May 31, 2004	Jun 30, 2004
Public site	524	988	839	603	938	996	1339	1367	1053	1502	2248	1993	2026	1948
Kids	94	204	236	132	428	498	244	536	269	396	582	1106	705	390
Youth	96	237	273	137	675	592	527	804	489	529	951	1466	1058	698
Parents	143	256	309	212	542	500	419	580	434	541	1027	1571	910	585
Referrals	453	632	159	137	472	407	277	540	354	354	683	1477	826	431
Research	402	666	321	261	511	577	508	626	501	559	286	1520	1193	786
Staff	391	783	543	258	473	473	459	574	363	606	238	1073	829	684
What's New	134	282	152	80	136	605	186	309	275	478	858	959	778	648
ADAW S	484	655	282	247	954	735	803	1116	1122	1247	1760	1984	1460	951
Total	2721	4703	3114	2067	5129	5383	4762	6452	4860	6212	8633	13149	9785	7121

Burns, J., Ellis, L., Mackenzie, A., & Stephens-Reicher, J. (2009). Reach Out! Online Mental Health Promotion for Young People. *Counselling, Psychotherapy, and Health*, 5(1), The Use of Technology in Mental Health Special Issue, 171-186.



Reach Out: Online Mental Health Promotion for Young People

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Abstract

In Australia one in five young people experience a mental health problem, however of this only 30% receive professional help, indicating a significant gap in the provision of mental health services for this group. The internet provides a relevant and engaging opportunity to overcome the barriers to help-seeking and connect with young people. This article examines an online initiative: Reach Out, a mental health service that uses the Internet to enable young people to help themselves and others, with a focus on health promotion and intervention. Reach Out utilises innovative and relevant youth technologies with a grounding youth participation model and a marketing and branding strategy which places Reach Out amidst youth culture. ReachOut.com harnesses communication technology and draws from the current evidence base and best practice models in intervention and clinical practice creating the potential to positively impact on the mental health and emotional well being of young people.

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“It is incumbent upon mental health services to find ever more creative ways to engage young people, and in ways that reflect their own cultures and forms.”

(Coyle, Sharry, Nisbet, & Matthews, 2003, p. 27)

Concerns regarding the mental health of young people have become increasingly pressing, with recent reports identifying depression as the leading cause of nonfatal disabling conditions worldwide (Lopez, Mathers, Ezzati, Jamison, & Murray, 2006). According to the World Health Organisation, the prevalence of mental health problems is increasing, resulting in widespread economic and societal burden. Indeed, projections estimate that by 2020, depression will be the second leading cause of death and disease worldwide (Murray & Lopez, 1996). Current research from the United States has identified that half of the US population will experience a mental illness at some time. Onset usually occurs in childhood and adolescence with more than 75% of lifetime cases of mental illness commencing before the age of 25 (Kendall & Kessler, 2002; Kessler, Foster, Saunders & Stang, 1995). These figures are disturbing in view of evidence that early onset mental disorders are often more persistent and severe than later onset disorders (Kendall & Kessler, 2002).

In Australia one in five young people experience a mental health problem, of which seventy percent do not receive professional help (Kessler et al., 1995; Sawyer et al., 2000). Lack of treatment brings with it further complications, such as self medication with alcohol and drugs, as well as the inability to thrive socially, academically and vocationally (Hickie, Koschera, Davenport, Naismith, & Scott, 2001). A specific focus on prevention and early intervention is necessary in order to reduce youth and adult mental health difficulties in the long term (Burns, Andrews, & Szabo, 2002; McGorry, Hickie, Yung, Pantelis, & Jackson, 2006).

In Australia 85% of young people aged 14–24 reported using the Internet, with 40% using it regularly (Department of Communications Information Technology and the Arts, 2005). The uptake of the Internet and related technology offers unprecedented opportunities to deliver online health promotion, prevention and early intervention

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strategies at a population level (Burns & Morey, 2008; Collin & Burns, 2008). This article provides a case study of an online initiative: Reach Out, a mental health service that uses the Internet to enable young people to help themselves and others. The broad Reach Out service comprises of the website ReachOut.com (www.au.reachout.com), an active youth participation model and innovative youth branding and marketing initiatives. Services such as ReachOut.com that harness communication technology, but which also draw from the current evidence base and best practice models in intervention and clinical practice, have the potential to make a significant positive impact on the mental health and emotional well being of young people (Burns, Morey, Lagelée, Mackenzie, & Nicholas, 2007).

Background

“I know that I really do need to see a doctor about my depression, but I am scared, and I don’t want my parents to know. I wish I could just pull myself out of this depression. But I don’t know how to. I am sick of feeling trapped and having a big black cloud flying over my head. But I don’t know what to do. I just wish there was some simple answer”
Female Reach Out User, 16, Queensland

Mental health problems in Australian youth

Almost one in five Australians are affected by mental illness each year (Andrews, Hall, Teeson, & Henderson, 1999). Young people (aged 18-24) are at highest risk for mental illness, where the prevalence rate rises to 27% (Australian Institute of Health and Welfare, 2003). This figure is similar to that from studies of young people in the United States and other Western countries (Irwin, Burg, & Cart, 2002). Experiences of mental health problems such as depression can lead to other serious problems including substance abuse, social withdrawal, a breakdown in family and personal relationships and poor academic and work performance. Depression is also linked to substance abuse, eating disorders and implicated in many cases of youth suicide (Rao, Daley & Hammen, 2000).

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Suicide is one of the leading causes of death in Australia, with recent figures from 2007 attributing 1,181 deaths to suicide (Australian Bureau of Statistics, 2009). Although suicide rates have been declining since 1997, between 2004 and 2007 suicide rates remain the leading cause of death in the 15 to 24 age group after motor vehicle accidents (Australian Bureau of Statistics, 2009). Compared with other developed countries, Australia has a relatively high incidence of suicide, particularly for young males (Cantor, Neulinger, & De Leo, 1999).

The gap in mental health support for Australian youth

A major problem in addressing the mental health needs of Australian youth is their lack of access to and utilisation of mental health services. Only 29% of Australian children and adolescents with a mental health problem contact a professional service of any type (Sawyer et al., 2000). Given the poor prognosis for adolescents with untreated psychopathology these low rates of access, assessment and treatment are particularly disturbing (Gould, Munfakh, Lubell, Kleinman, & Parker, 2002).

The high levels of reported mental health difficulties among young people indicate a very large demand for mental health services in Australia. However, current face-to-face services (such as counselling services or GPs) and phone-based counselling services face challenges in meeting this demand (eg, Wilson et al., 2003; Kids Helpline, 2008). Furthermore, the cost of delivering these services is very high. In rural areas where face-to-face primary care is limited, it is likely that many people with mental health difficulties will not have their needs met through traditional forms of service delivery. As a result, there is a pressing need to develop alternative approaches to reduce the incidence of mental health problems in Australia (McGorry et al., 2006).

Use of the Internet as a tool for health service delivery

Internet usage among adolescents has grown exponentially over the past decade and in most countries young people under the age of 25 are the greatest users of the Internet (Department of Communications Information Technology and the Arts, 2005; Loyd & Bill, 2004). Thus, the Internet offers a unique opportunity to provide mental health

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services to a large proportion of the population, including those in remote locales and during times when traditional service providers are unavailable (Gould et al., 2002).

The Internet also has particular advantages that increase its potential to deliver these services to young people; a group traditionally resistant to seeking help (Coyle, Sharry, Nisbet, & Matthews, 2003). Research indicates that reluctance to seek help is largely due to: feeling that their problem is too personal; concerns regarding confidentiality; and a belief that they can handle the problem on their own (Dubow, Lovko, & Kausch, 1990). Furthermore, those who do seek help are more likely to seek informal help, such as from friends, before they turn to formal sources (Gould et al., 2002). The Internet is uniquely able to combine the knowledge base of formal sources with the accessibility of informal forms of help. Young people can use it anonymously, in an informal and autonomous manner, mitigating concerns about confidentiality and independence (Coyle et al, 2003; Gould et al, 2002).

It is not surprising then that the Internet is increasingly becoming the support of choice, with research demonstrating that young people are actively seeking health information and referrals through online discussion groups (Aspden & Katz, 2001). A study conducted in the United States, found that almost one-fifth of American adolescents aged 13 to 19 sought help on the Internet for mental health problems during the previous year (Gould et al. 2002). Data from the Pew Internet and American Life Project indicated that one in three American adolescents aged 12 to 17 have used the Internet to access sensitive health information (Lenhart & Madden, 2005).

In Australia, a convenience survey of 45, 558 young people aged 11 to 24, found that after family and friends, young people turn to the Internet for advice and support (Mission Australia, 2008). The results of this survey demonstrated that young people are twice as likely to turn to the Internet as contact a counsellor, community agency, teacher, doctor or minister, and are 5-10 times more likely to turn to the Internet than call a telephone helpline. The Internet should be seen as a valuable tool in health promotion and as a means of delivering good quality information to young people.

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Reach Out – Addressing the gap in mental health services for young people using the Internet?

“When people meet me now, they see a confident 21 year old who loves life. But things haven’t always been that way. There are always reminders of the way that I used to be; the antidepressants, the scars on my body, and the friends I no longer see. But even in the darkest moment, there was always some light”

Female Reach Out User, 21, NSW

ReachOut.com (www.au.reachout.com) is a web-based service for young people aged 14 to 25 that aims to bridge the gap between available formal support services and young people who need them. It is the flagship initiative of the Inspire foundation, a not-for-profit organisation, established in 1996 in response to Australia’s unacceptably high rate of youth suicide and attempted suicide. ReachOut.com is designed to connect young people to information, referrals to appropriate sources of help and stories about how others manage mental health problems. The website provides an entry point for all young people, enhancing their mental health literacy and facilitating help seeking, particularly for those who are geographically isolated, are not comfortable seeking professional help or are unsure about where to find professional help. It is also being used by schools, General Practitioners and counsellors as a tool to better support young people.

Since the site was launched in 1998, ReachOut.com has focused on building a reputation with young people for being a credible and reliable resource for mental health advice and support. In 2008 Reach Out received 1,429,540 unique visits, averaging to 119,128 unique visits each month and is thus now recognised as a popular online mental health service for young Australians.¹

Core components of Reach Out

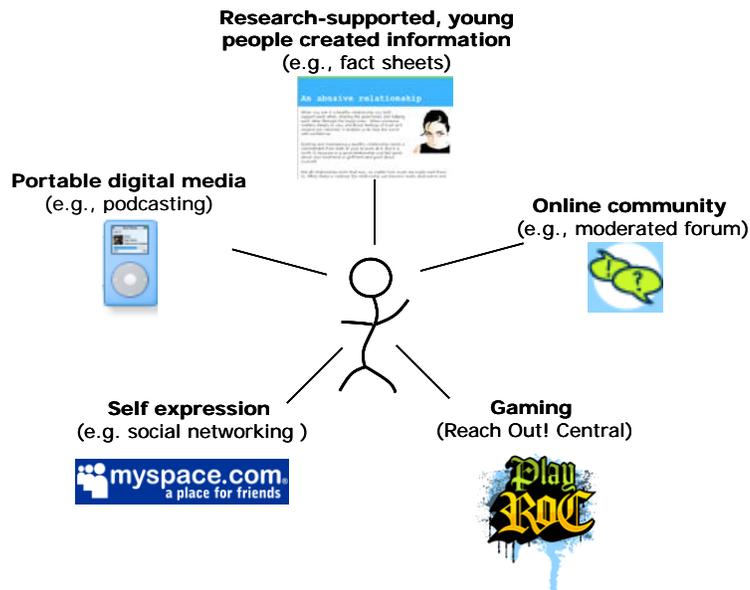
Recognising the need for mental health services to foster creative and enjoyable learning environments for young people (Coyle et al., 2003), ReachOut.com is much more than just an information site and is designed to engage young people in a way that appeals to

¹ Google Analytics

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them, thus increasing their likelihood of turning to ReachOut.com when they need help. ReachOut.com provides both evidence and experience based information and has been redeveloped with new functionality which in the future will engage with both purposeful users who know what they are looking for and confused users who feel that something is 'not quite right' within themselves, but are unsure where to look on the site. For purposeful users clear content headings are available whereas confused users will be able to work through the site using emotion-based navigation, a tool made possible by previous users who will have 'tagged' each page they visit with how they feel and thus created a virtual emotion-based map of the Reach Out website. The redeveloped website will also enable an increased sense of community with commenting functionality on fact sheets and a blog where conversations about mental health and well-being will take place. ReachOut.com currently consists of six key components (Burns et al. 2008; Burns & Morey, 2008). Each of these components is outlined below.

Figure 1: Core components of the ReachOut.com platform



1/ Research-supported information that is appealing and meaningful to young people. ReachOut.com has a database of over 250 fact sheets that provide a range of information on mental health issues and guidance on where to find help in the community. These fact sheets have been developed by mental health professionals and other youth experts, and are vetted by young people to ensure that the content and the ‘voice’ resonate with young people. The information young people most commonly seek on the site relates to depression and mental health, as well as friends and relationships (Durkin, Burns & Stephens-Reicher, in press).

2/ Online community forum. Recognising that young people need a space where they can interact and share their experiences with others, ReachOut.com runs a peer-moderated online forum so that young people from around Australia can safely and anonymously discuss their experiences relating to mental health issues, share their strategies for getting through tough times and leading a happier life and increase social connectedness. The forum is supervised by Reach Out staff to ensure that young people focus on supporting each other and promote positive and constructive discussions (Webb, Burns & Collin, 2008).

3/ Online gaming. Reach Out Central (ROC) is an interactive game designed to engage young people in mental health issues and enable them to develop resilience and positive coping skills. Based on the principles of Cognitive Behavioural Therapy, ROC is designed to appeal to young people through interactivity, colourful aesthetic, use of popular music and ease of use.

4. Self-expression. Young people are using the Internet to express themselves creatively and to share their personal experiences (e.g., MySpace, YouTube, and other social networking sites). ReachOut.com builds on this movement by enabling young people to share their stories of how they have made it through tough times on the website. The website also features interviews with celebrities and high profile community members about how they have got through their tough times and achieved their goals.

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5. Portable digital media. Young people are increasingly looking for ways to access and transport digital media. Podcasting is currently available from ReachOut.com and allows users to download 15-minute audio clips about a range of issues including help seeking, relationships and drugs and alcohol. In 2005 Reach Out trialled an short message service (SMS) campaign for young people during exam times. Young people were sent tips to their mobile phone on managing stress, keeping active, eating well and so on. Results from the campaign were encouraging and Reach Out is currently looking to incorporate this feature into the website permanently.

6. Reach Out Professional. To support professionals to use technology when working with young people sister website Reach Out Pro (<http://www.reachoutpro.com>) was developed in collaboration with the sector. Aimed at a range of professionals including General Practitioners, psychologists, psychiatrists and allied health workers the Reach Out Pro website provides professionals with informative and interactive features, enabling them to learn more about engaging and supporting young people through ICT and in particular, ReachOut.com.

Research findings on ReachOut.com

Approximately 30% of young people aged 16 to 25 are currently aware of Reach Out (Burns et al, 2008). Data was collected from 904 non-professionals (yrs <14 - 25> yrs) hereby referred to as young people and 102 professionals over a two month period in 2008 for the purposes of user profiling. The study revealed that 80% of young people² said that they would recommend the service to a friend. Most young people who knew of Reach Out (n=904) identified that they had heard about the service through educational institutions (28%), major youth retailer Jay Jays (25%) or through an online environment, e.g. links, search engines, social networking sites (22-27%) (Durkin et al., in press). Although young people's awareness of Reach Out still needs to be improved, market research indicates that awareness appears to be steadily increasing with comparisons of

² Excluding respondents who answered 'Don't know' to this question.

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the 2006 data to previous results indicating that awareness has increased by 43% since the first online survey was conducted by The Leading Edge in 2003.³

Further, the 2008 user profiling study showed that one in four young people who use the Reach Out website visit it at least once a week (24%), and one in four stay on the website for more than 20 minutes (27%). The vast majority of young people said that they would return to the Reach Out website if going through 'tough times' (81%) and would refer the website to a friend (81%). Moreover, over half (59%) of all repeat users going through a tough time (n=266) reported that they went on to contact professional services after visiting the website. A further 19% noted that they had 'not yet' spoken with a professional, indicating an intention to do so. Consistent with previous research, most respondents reported that they had sought help from a friend after visiting the website (75%). Overall, 80% of non-professional users rated the website as 'very good' or 'excellent' and 72% said that the site 'made me feel like I was not alone.'

This user profiling study (Durkin et al., in press) also showed that professionals are utilising Reach Out to complement their professional practice. Of the 102 professionals who completed the online survey, around half visit the Reach Out website at least once a month (51%) and use the website to find resources to help the young people they work with (47%). Overall, 92% of professionals rated the site as being 'very good' or 'excellent'. The majority of professionals also said that they were likely to recommend ReachOut.com to young people and their colleagues.

What is unique about Reach Out?

The Internet offers unique opportunities for flexible and accessible services for young people. Reach Out is designed to harness the power of computer technology by using it in a creative and appealing way, but also by ensuring that it is bound to the current evidence base and best practice models in intervention and clinical practice. As an anonymous, web-based service, Reach Out also provides the opportunity to engage young males, who have traditionally been a hard to reach group.

³ Based on Reach Out awareness survey results of 876 participants collected between October-December 2006 conducted by Leading Edge

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Reach Out can be accessed by young people who are geographically isolated, and at low cost. Face-to-face counselling sessions can cost more than \$150 per hour, and tele-counselling more than \$20 per hour (Urbis, Keys & Young, 2002). The low unit cost of ReachOut.com makes it an attractive viable alternative for those going through difficulties which don't require clinical support.

Young people are uniquely involved in Reach Out to ensure that the service is closely aligned with the needs, interests and language of today's youth. Participation is a central tenet of the Inspire Foundation and more than 500 young people from a variety of backgrounds aged 16 to 25 have been directly involved in the development and delivery of the Reach Out service since 1999. 'Inclusiveness' is an organisational value and Inspire is formally committed to involving young people in meaningful ways through collaboration. Reach Out has also uniquely partnered with the popular youth brands, Jay Jays and Habbo to increase the likelihood that young people will turn to the service when they need help. The following sections further explain the importance of both the youth participation model and youth branding to Reach Out.

Youth Participation Model. The Reach Out Youth Participation model was established to ensure that young people can influence both the development and delivery of Reach Out. Young people's involvement ensures Reach Out and the Inspire Foundation are credible and relevant to young people. The model is founded on the underlying principles of youth participation, but has shifted from an emphasis on consultation to partnership with young people. An action based research methodology has informed the development of the model which incorporates current best practice and ensures that young people have significant influence over the process and content of decision making at all levels of program or project development.

Whilst previously Reach Out focused on the rights of young people to be involved in the making of decisions that affect them and on developing youth capacity and building skills, Reach Out has adopted a youth involvement model which stresses young people as crucial to the development of innovative and appropriate services for the Inspire Foundation. Nevertheless it is recognised that through partnering with Inspire, young

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people may develop and build skills and through the promotion of self worth, responsibility, autonomy, accountability, self awareness, emotional competencies, membership, belonging and civic and social competence, strengthen their positive mental health and wellbeing (Oliver, Collin, Burns & Nicholas, 2006).

Recently, the Inspire Youth Participation Model moved from formal program-based opportunities for engagement (see Swanton, Collin, Burns & Sorensen, 2007) to youth-led activities across all areas of the Foundation's work. This reflects a shift in young people's preferred forms of participation to more informal and project-oriented participation (Collin, 2008). There are two tiers in the new Reach Out model:

1. meaningful online and offline opportunities such as: project based work, internships and participation in online community feedback which includes offering opinions on new features, discussions on programmatic issues and online polling; and,
2. opportunities for paid employment through a model of youth consultation. Young people with valuable expertise can significantly contribute to the Inspire Foundation and as such will be employed as consultants, providing both work experience and monetary incentive to the young people involved.

These initiatives are expected to increase overall levels of youth participation and 'everyday' participation opportunities, broadening the type, level and duration of involvement. This model allows young people to service both program delivery and organisation-wide teams, for example, Marketing and IT.

Youth brand and media partners Reach Out embraces youth culture, having a presence in environments that young people associate with fun and aspirations. Reach Out has developed capabilities in cultivating and growing partnerships with the following sectors:

- National youth brands - including Jay Jays and Habbo.
- Google Adwords – free sponsored links on google.com.au which have driven 49,000 users to the Reach Out! website within the first three months of operation

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- Local youth-serving organisations and schools
- Popular culture linkages through sports and music celebrities and events
- Innovative marketing campaigns using online and outdoor media to reach young people in the communities where they live and spend their free time.

Reach Out also recognises that the explosive growth of social networking websites, such as MySpace and Facebook, represent a tremendous opportunity to connect with young people using viral marketing techniques. Currently, the myspace Reach Out page has 4740 friends and the facebook group has 330 members. The Inspire Foundation has also embraced the fast growing and popular micro-blogging tool, Twitter, to connect with the existing and expanding community who care deeply about young people; supporters, parents, young people, social technology experts and community partners. As both a marketing and social connectedness tool, Twitter extends our reach and builds community beyond Inspire's programs.

Conclusion

“Throughout my high school years I suffered from what I now know was depression and at times I seriously considered taking my life...I turned to the Internet for help hoping that I could find some information to tell me what I should do. Soon I came across the Reach Out web site and I could not believe what I found. This was exactly what I was after, easy to navigate, a range of fact sheets on issues and information on where to find help. Finding this web site has changed my life and may have even saved my life.”

Male Reach Out User, 22, South Australia

ReachOut.com is a highly unique service that provides mental health information in a non-threatening and easy to understand manner that has overcome the stigma attached to seeking help and thus, facilitating a change in young people's help seeking behaviour. It offers an opportunity for young people to take their first steps towards accessing professional mental health support and for community based services such as GPs, health centres and clinicians to more effectively engage with young people.

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ReachOut.com is closely aligned with the needs, interests and language of today's young people. Young people are constantly involved in the development and delivery of the service, thus increasing its credibility with young people. Its marketing campaigns and youth brand partners also increase the likelihood that young people will feel comfortable turning to the service when they need help, resulting in better services accessed by more young people who need them.

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Use of the Internet in the Treatment of Anxiety Disorders with Children and Adolescents

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Abstract

This article describes the use of computer- and internet-based interventions as a potential alternative treatment approach for children with anxiety disorders. Given the paucity of research into computerised treatments for child anxiety, this article begins by reviewing the literature regarding the application of computers in adult anxiety disorders. It will also review the available literature relating to computerised interventions for childhood disorders generally and more specifically, for childhood anxiety. Further, it will describe the development of BRAVE – ONLINE, an internet-based, CBT intervention for child anxiety and discuss the program findings to date. Such internet-based interventions have the potential to greatly increase the dissemination of psychological interventions to children in need.

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Anxiety disorders are among the most common psychosocial problems in childhood and are associated with a range of adverse consequences if left untreated (Costello et al., 1996; Essau, Conradt, & Petermann, 2000, 2002; Silverman, Pina, & Viswesvaran, 2008). Cognitive-behaviour therapy (CBT) has been extensively researched and demonstrated to be an effective treatment for the majority of children with anxiety disorders (Barrett, Dadds, & Rapee, 1996; Barrett, Duffy, Dadds, & Rapee, 2001; Kendall, 1994; Kendall & Southam Gerow, 1997; Kendall et al., 1996). Some studies have found slightly stronger effects if therapy includes training in parenting techniques, in addition to child-focused components (Barrett, Rapee, Dadds, & Ryan, 1996; Cobham, Dadds, & Spence, 1999), although not all studies have found parental involvement to provide additional benefits (Nauta, Scholing, Emmelkamp, & Minderaa, 2003; Spence, Donovan & Brechman Toussaint, 2000). In a recent review, Silverman et al. (2008) examined all available treatment studies and concluded that individual CBT and group CBT meet criteria as *probably efficacious* treatments for child anxiety, whilst other treatments including parent involvement were *possibly efficacious*.

Despite the development of effective therapy, the vast majority of anxious children do not receive treatment for their problems (Essau et al., 2000). There are various explanations for this. Failure to receive therapy may reflect lack of parental awareness of the problem and its consequences, lack of knowledge about effective treatments, and/or lack of availability of services and professionals who are trained in the delivery of CBT approaches. Another explanation for the failure to seek treatment is that many families have difficulty attending a clinic on a regular basis, particularly those

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living in rural and remote areas. Furthermore, CBT is costly and current clinical services would be unable to meet demand if all cases were to request treatment.

These issues are not unique to child anxiety and other areas of health have attempted to increase access to treatment through the use of computer-based technology, as an alternative or adjunct to clinic-based therapy (Newman, 2004). Cognitive behaviour therapy, in particular, has been suggested to be well suited to computer-based administration because of its structured and systematic format (Anderson, Jacobs, & Rothbaum, 2004; Kenardy & Adams, 1993; Selmi, Klein, Greist, Sorrell, & Erdman, 1990).

Most of the research regarding the feasibility and efficacy of computer-delivered treatment of anxiety has been limited to adult populations. Thus, before examining the literature relating to computer-based treatment of anxiety in children, the following section discusses the outcome studies involving adults.

Computer and Internet-Based Treatment of Anxiety Disorders in Adults

Computer-aided treatment may involve various technological forms, such as internet sites, email, chat-rooms, palmtop computers, virtual reality, interactive voice response systems, desktop computer programs and CD-ROMs. The extent of therapist participation can also differ considerably with these technologies, ranging from stand-alone, self-help treatments with no therapist contact, to computer applications with some therapist involvement via telephone or email, or delivered as an adjunct to face-to-face therapy.

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Impact of Computer-Based Application of Specific Components of CBT

The level of complexity of the interventions delivered using computer-based approaches have differed considerably, with some being limited to specific elements of CBT, such as systematic desensitisation, in-vivo exposure or vicarious exposure, whereas others have involved more comprehensive programs that contain multiple CBT components.

Systematic Desensitisation. Buglione, Devito, and Mulloy (1990) compared computer-instructed, systematic desensitisation to group therapy in 36 university students with test anxiety. Both treatments were equally effective in reducing test anxiety. Computer-administered, systematic desensitisation for treating test anxiety has also been shown to be effective in two case studies (Biglan, Villwock, & Wick, 1979; Wilson, Omeltschenko, & Yager, 1991). Chandler and colleagues (Chandler, Burck, Sampson, & Wray, 1988; Chandler, Burck, & Sampson, 1986) similarly found computer-delivered, systematic desensitization to significantly reduce anxiety scores in the treatment of specific phobias.

In vivo Exposure. Several computer programs have been developed to provide clients with step-by-step instruction for in-vivo exposure. Ghosh, Marks, and Carr (1988) developed and tested a self-instructed computer program for in-vivo exposure in a sample of 40 agoraphobic patients. They examined the effectiveness of this computer program, in comparison to self-instructed exposure by a therapist, or self-help workbook and found no difference in effectiveness among the three formats. Greist et al. (2002) developed a computer-driven interactive voice response system (IVR) for exposure in the treatment of obsessive-compulsive disorder. This program (BT steps) allowed patients to progress

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through a computer-driven, self-paced workbook accessed via the telephone. The authors compared BT steps to clinician guided self-exposure and self-relaxation in a large sample of 218 patients with obsessive-compulsive disorder. Results indicated that clinician-guided exposure was significantly more effective than computer-guided exposure and that both treatments were superior to relaxation. However, computer-guided patients who completed at least one self-exposure homework session improved as much as clinician-instructed patients. This finding suggests that poor patient compliance with computer-based treatment may explain the weaker results for computer-guided exposure. Patients also reported greater satisfaction with clinician-guided exposure therapy, compared to computer-guided therapy and self-relaxation.

Vicarious Exposure. Several studies have examined computerised application of vicarious, rather than *invivo*, exposure in the treatment of anxiety disorders. These programs are based on the principles of observational learning and require participants to act as therapists, by guiding an on-screen figure through different anxiety provoking scenarios, which are related to their own specific anxiety problem. Smith, Kirkby, Montgomery, and Marks (1997) compared three different versions of computer-aided vicarious exposure in a sample of 45 individuals with spider phobia. The computer conditions included vicarious exposure with computer feedback, vicarious exposure without feedback and a control group that received irrelevant exposure with feedback. At post-treatment and 12-month follow-up, participants in all three conditions showed a reduction on outcome measures, including those in the control group. The authors concluded that the general reduction in phobic symptoms was due to either a non-specific therapeutic factor, or to a natural reduction in symptoms over time.

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In a more recent study, the same research group (Gilroy, Kirkby, Daniels, Menzies, & Montgomery, 2000) examined the efficacy of computer-aided vicarious exposure, standard in-vivo exposure and progressive muscle relaxation for the treatment of spider phobia (n=45). They found that computer-aided and live exposure were equally effective in reducing phobic symptoms at post-treatment and 3-month follow up, and that both treatments were superior to relaxation. However, participants who received live exposure showed a trend towards higher ratings of treatment satisfaction, compared to computer and relaxation conditions. At 33-month follow-up, computer-aided and live exposure maintained treatment gains, but these differences were no longer statistically significant from the relaxation control (Gilroy, Kirkby, Daniels, Menzies, & Montgomery, 2003).

Clark, Kirkby, Daniels, and Marks (1998) also investigated the efficacy of a computer vicarious exposure program in a pilot study of 13 participants with obsessive-compulsive disorder. Participants completed three, 45-minute computer sessions of vicarious exposure and response prevention. Results indicated that scores on two of the three outcome measures were modestly reduced from pre- to post-treatment. In another study, Harcourt, Kirkby, Daniels, and Montgomery (1998) (1998) found computer-aided vicarious exposure led to a reduction in symptom scores in a sample of 18 adults with agoraphobia. However, neither of these studies included a comparison group or follow-up data.

Promising results for computer-aided vicarious exposure have also been found in the treatment of flight phobia. Bornas, Tortella-Feliu, Llabres, and Fullana (2001) developed and tested a computer program that involved graded exposure to a sequence of

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photographs and audio cues for different stages of a plane flight. They compared computer-assisted exposure, computer-assisted exposure with therapist-instructed arousal reduction and a wait list control. Results at post-treatment and six-month follow-up showed that both exposure treatments were equally effective in reducing fear ratings and superior to the control group.

Impact of Comprehensive Computer-based CBT Programs

In addition to exposure programs, a number of comprehensive computerised interventions have been developed. These computer programs involve differing levels of therapist participation and vary from individualised interventions tailored to treat specific anxiety disorders, to generic CBT programs that can be applied to several different anxiety disorders.

Palmtop computers. Palmtop computers demonstrate great potential as an adjunct to CBT for anxiety disorders, as they can be used to deliver and record therapy-related information and prompt individuals in anxiety reduction techniques, when faced with real-life anxiety-provoking situations. Researchers have developed palmtop computer programs for a number of specific anxiety disorders. These include obsessive-compulsive disorder, social phobia, generalised anxiety disorder, panic disorder and acrophobia. Overall, these studies have shown that palmtop computers can be used successfully as an adjunctive treatment for anxiety disorders.

Baer, Minichiello, Jenike, and Holland (1988) reported a case study with a patient with obsessive-compulsive disorder who used the computer to prompt compliance with response prevention exercises. Specifically, the patient referred to the computer each

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time they had an urge to perform a ritual. The computer then instructed the patient to resist the urge for three minutes and provided a reminder that no negative consequences would result from resisting the urge. Results indicated that the patient showed marked improvement in the reduction of rituals and in compliance to response prevention exercises. However the ritualistic behaviour returned to baseline levels once the computer was removed, which suggests the patient may have used the computer as a safety signal.

Subsequently, a computer program for generalised anxiety disorder (GAD) was developed and tested in a pilot study based on three subjects (Newman, Consoli & Taylor, 1999). In an attempt to reduce the cost of therapy, these researchers evaluated the effectiveness of six sessions of group CBT with adjunctive computer assistance. The computer was used over a 12-week period and included instruction in relaxation, cognitive restructuring and imaginal exposure. The three subjects reported significant reductions in anxiety over the 12-week period and none met criteria for GAD at post-treatment, or 6-month follow-up. These results suggest that the palmtop computer did not serve as a safety signal, as treatment gains were maintained after the computer was removed at the end of treatment. However these findings should be viewed with caution, given the small sample size and lack of comparison group.

Another palmtop computer program was developed for social phobia and was tested in a randomised controlled trial of 54 patients (Gruber, Moran, Roth, & Taylor, 2001). These researchers compared 12-session group CBT, 8-session group CBT with palmtop computer assistance and a wait-list control. The palmtop computer was used to assist with homework exposure assignments. Results showed that 12-session group therapy initially had stronger effects than computer-assisted therapy at post-treatment,

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however by 6-month follow-up, both treatments were equally effective in reducing social phobic symptoms. A recent case study has also documented reductions in social phobic symptoms following the use of a palmtop computer combined with group therapy (Przeworski & Newman, 2004).

The utility of palmtop computers has also been examined in the treatment of panic disorder. In a sample of 18 panic patients, Newman, Kenardy, Herman, and Taylor (1997) compared 4 sessions of CBT with adjunctive palmtop computer assistance, to 12 sessions of standard CBT. Computer therapy and standard therapy showed equal rates of satisfaction, credibility and dropouts. Following treatment, participants in the computer-assisted therapy showed significantly less clinical improvement than those in standard therapy (33% versus 54% respectively). However, this difference was no longer significant at 6-month follow-up, with 46% of patients in standard CBT and 35% of patients in computer-assisted CBT reporting clinically significant change. This finding suggests that computer-assisted therapies continue to produce improvements following treatment, catching up with the effects of clinic-based treatment. However caution should be taken when interpreting these findings, as this study failed to include a comparison condition involving brief therapy without computer assistance. Thus, it is unclear whether the palmtop computer provides any additional benefit beyond abbreviated CBT.

The methodological limitations of earlier studies have recently been addressed in a multi-centre treatment study comparing several CBT delivery modes in 186 patients with panic disorder (Kenardy, Dow et al., 2003). Participants were randomly allocated to one of four conditions; 12 sessions of CBT, 6 sessions of CBT, 6 sessions of CBT with

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palmtop computer assistance, or a wait-list control. At post-treatment, results demonstrated that 12-session CBT and 6-session CBT with adjunctive computer assistance were equally effective in reducing panic symptoms and superior to 6-session CBT and the wait list. At 6-month follow-up however, there were no significant differences among the three treatment groups. These findings indicate that palmtop computers can reduce the amount of therapist contact and still produce similar levels of improvement to standard clinic therapy. Furthermore, computer-assisted treatment improves treatment outcome beyond abbreviated therapy on its own, at least in the short-term. Treatment satisfaction and credibility ratings were similar for the three treatment conditions.

Desktop computer and CD-ROM programs. Therapy involving desktop computer programs has also been shown to produce positive effects in the treatment of anxiety disorders, as an adjunct to therapist contact. Shaw, Marks, and Toole (1999) initially evaluated Fear Fighter; a nine-module computer exposure program, as a self-help program within a sample of 15 patients with mixed anxiety who received no access to therapist contact. Results indicated that only 40% of participants showed moderate to marked improvement. In response to these limited results, the authors suggested that the effectiveness of computer-based programs could be improved if patients had some contact with a therapist. Subsequently, the impact of the Fear Fighter program, combined with brief therapist contact, was examined. Eighty-five individuals with mixed anxiety disorders, including agoraphobia, social phobia, generalised anxiety disorder and specific phobias participated in the study (Kenwright, Liness, & Marks, 2001). They compared the therapist-assisted computer program (Fear Fighter) to therapist-guided self-exposure.

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Participants in the Fear Fighter condition completed computer sessions at the clinic and spent the first 10 minutes of computer sessions with a therapist, the next 40 minutes working at the computer, and a final 10 minutes with the therapist to discuss further work and problem solving. Post-treatment data indicated that the two groups reported similar reductions in symptom scores, despite patients in the Fear Fighter group spending 86% less time with the therapist, compared to therapist-guided exposure patients. However, the computerised therapy condition had a substantial attrition rate (41%). Another limitation of this study was that patients were not randomised to conditions. Instead, patients in the computer condition were self-referred and as such were less severe than the clinic group on several outcome measures at pre-treatment.

The same research team addressed this limitation in a recent randomised control trial of 93 outpatients with phobia or panic disorder (Marks, Kenwright, McDonough, Whittaker, & Mataix-Cols, 2004). They compared the efficacy of the Fear Fighter program to therapist-guided self-exposure and a relaxation placebo. Like the previous study, participants allocated to the Fear Fighter program received 20 minutes of therapist contact at each computer session. Results showed that both exposure treatments produced significant improvements on outcome measures at post-treatment and one-month follow-up, whereas the relaxation placebo produced minimal change. These results replicated earlier findings, indicating that computer-based exposure programs with minimal therapist contact can be as effective as therapist-guided self-exposure for individuals with anxiety disorders. Furthermore, treatment helpfulness and satisfaction ratings were similar for both treatments, although more dropouts were found in the computer condition (43%), compared to the therapist-guided condition (24%).

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White, Jones, and McGarry (2000) investigated the effectiveness of a CD-ROM program for the treatment of anxiety, in a sample of 26 patients with chronic and severe anxiety from low socio-economic backgrounds. The CD-ROM comprised three sessions that covered psychoeducation, relaxation, cognitive restructuring and relapse prevention. Results indicated that 20% of patients in the computer treatment showed clinically significant change at post treatment and 50% at 6-month follow-up. Although these results look promising, it is difficult to determine whether improvements were due to therapy, non-specific effects, or natural recovery, as the study did not include a control group.

Online therapy. One of the more recent applications of computer technology has been to make use of the internet for communication between patients and therapists, and/or for the delivery of intervention information, instructions and materials. Only one study appears to have examined the use of chat-based online therapy for anxiety, most likely due to the privacy and ethical concerns associated with this technique. In a single case study, Rassau and Arco (2003) examined the effects of 6 sessions of online chat-based CBT for test anxiety. The participant reported a reduction in test anxiety and an increase in positive study behaviours, including note taking, hours of study and number of pages read. However, this finding is limited by a single case design and lack of follow-up data.

Email is another mode of internet delivery that has been used to increase communication between patients and therapists. In a randomised controlled study, Lange, van de Ven, Schrieken, and Emmelkamp (2001) examined the effectiveness of an email-assisted treatment for post-traumatic stress and pathological grief in a sample of 25

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university students who had experienced a traumatic event. The intervention involved 10 sessions of self-directed writing tasks with therapist feedback provided via three email contacts. Those participants randomly allocated to the email-assisted intervention showed significantly greater improvements in trauma-related symptoms and general psychopathology at post-treatment and 6-week follow-up, compared to a wait-list control. The same research group has recently replicated these findings using a larger community sample of 101 participants (Lange, Rietdijk et al., 2003). Although these findings are encouraging, it is uncertain whether they can be generalised to a clinical sample of patients with post-traumatic stress disorder.

Internet sites have also been used to provide a vehicle through which to deliver therapy information, guidance, and materials. Kenardy, McCafferty, and Rosa (2003) randomly allocated 74 university students with elevated anxiety to a 6-week CBT internet treatment or a wait list control condition. The internet program consisted of psychoeducation about anxiety, instructions for relaxation training, interoceptive exposure, cognitive restructuring and relapse prevention. Following treatment, participants in the internet condition demonstrated significantly greater reductions on three of the five outcome measures, including anxiety related cognitions and depressive symptoms. Drop-outs were found to have significantly greater levels of anxiety and depression, than those participants who completed the program. The beneficial effects of the intervention were maintained at 6-month follow-up (Kenardy, McCafferty, & Rosa, 2006). It should be noted, however, that the sample in the Kenardy, McCafferty, et al. (2003) study were of relatively low anxiety severity and it is important to determine whether similar benefits emerge with more severe cases.

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In a randomised control study, Klein and Richards (2001) examined the efficacy of a two-module internet-based information program compared to a wait list control condition, within a sample of 22 participants with panic disorder. The internet modules contained information about the nature, effects and causes of panic, useful and non-useful ways of managing panic, and brief suggestions on how to overcome thinking errors. The internet condition also involved limited therapist assistance, in that participants were telephoned to check whether they were using the program. Following treatment, participants in the internet condition reported significantly greater reductions in panic frequency, anticipatory fear of panic, general anxiety, body vigilance and increases in self-efficacy for managing panic, compared to controls. However it was unclear whether these effects were sustained in the long-term, as no follow-up assessment was conducted.

Richards and Alvarenga (2002) replicated these results using an extended, more detailed internet-based information program consisting of five modules. Nine participants with panic disorder worked through the program over a 5- to 8-week period and were re-assessed three months after completing the program. This study involved limited therapist assistance in that participants were telephoned to check whether they were experiencing any difficulties in using the internet program. Program use was associated with significant reductions in panic frequency and distress during panic attacks. Although this study evaluated treatment effects over a longer period, it was limited by a small sample size and lack of a control group.

These limitations were recently addressed in a larger controlled trial of 55 participants with panic disorder (Klein, Richards, & Austin, 2006). Participants were randomly allocated to one of three conditions; a 6-week CBT internet program with

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therapist guidance via email, a self-help written manual with therapist guidance via the telephone, or an information only control condition with telephone contact. Both active treatments were associated with improvements on panic-related outcome measures, in comparison to the information only control condition. Reductions in panic symptoms were maintained for both treatments, with the internet-based treatment being superior to the written self-help manual at 3-month follow-up, in terms of physical health and reduced visits to the GP. These findings suggest that internet-based CBT with limited therapist guidance may be more effective than other self-help treatment methods for panic disorder. Klein et al. (2006) also explored the quality of the therapeutic alliance in the two treatment conditions. Overall, participants in both the internet condition and the written self-help manual condition rated a high level of therapeutic alliance, with no significant difference between the treatments. Interestingly, ratings of the therapeutic relationship were found to be unrelated to treatment outcome, which suggests that a good therapeutic relationship may not be necessary for treatment success in internet-based therapy.

Recently, Carlbring et al. (2005) reported the results of a trial that compared internet self-help plus minimal therapist contact by email, with traditional clinic-based CBT, in the treatment of panic disorder. Minimal differences in outcome were found at post-intervention and 1-year follow-up, with both treatments producing significant, lasting reductions in anxiety. Similar positive findings, with strong effect sizes have been found for internet treatment of social phobia, involving minimal email contact (Andersson, Bergstrom, Carlbring, & Lindefors, 2005; Carlbring, Furmark, Steczkã, Ekselius, & Andersson, 2006). Andersson et al. (2005) suggested that it was preferable to

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conduct exposure in vivo, and therefore added two group exposure sessions to the internet program. However, Carlbring et al. (2006) found equivalent effects when the full program was delivered over the internet, including instructions for the conduct of exposure tasks.

Researchers have also compared the effectiveness of different computer-based treatments for anxiety. For example, Carlbring, Ekselius, and Andersson (2003) randomly allocated 22 participants with panic disorder to either CBT or applied relaxation, with both treatments delivered on the internet. The results indicated no differences between the two conditions at post-treatment, although participants in the applied relaxation condition showed a trend towards greater reductions in panic and anxiety symptoms. This trend was somewhat unexpected, given that applied relaxation has been shown to be less effective than cognitive therapy for panic disorder in standard clinic therapy. However, it should be noted that on average only 56% of the CBT internet program was completed by participants. The authors suggested that the use of standardised emails, rather than individually tailored emails, may have contributed to poor compliance to the CBT program. This indicates that compliance may be an important variable to consider when examining the effectiveness of stand-alone computerised treatments. Carlbring et al. (2003) concluded that although internet-based treatments appear to be effective, some active therapist involvement may be required for increasing compliance.

Richards, Klein, and Austin (2006) examined the benefits of adding an internet-delivered stress-management module to their standard CBT internet program in the treatment of panic disorder. Contrary to expectations, the addition of the stress-

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management component did not add significantly to outcome at 3-month follow-up, although effects for the stress-management-CBT condition were superior to CBT alone immediately after treatment. Patients in both internet therapy conditions showed significantly greater reductions in panic disorder symptoms compared to an information-only approach.

Virtual reality. Virtual reality is another technology that has been used as an adjunct to therapy for anxiety. Virtual reality is used as an exposure tool, which allows individuals to become active participants within a computer-generated, three-dimensional environment. Individuals wear a head-mounted display, which provides visual and auditory cues in the simulated environment and allows this world to change with head and body motions (Anderson et al., 2004). Virtual reality offers several advantages over traditional therapy. For instance, it can be used for exposure to situations that are difficult to arrange and control, and the level of threat can be regulated (Rothbaum et al., 1995a). However one of the major disadvantages of virtual reality is that current equipment is prohibitively expensive and thus beyond the budget of most therapists (Anderson et al., 2004). As such, only a brief summary of research on this treatment approach is provided here. For a more extensive review of virtual reality exposure therapy for anxiety disorders, please refer to Krijn, Emmelkamp, Olafsson, and Biemond (2004).

Case studies have shown that virtual reality when delivered as part of a comprehensive anxiety treatment program (e.g. breathing retraining, cognitive restructuring) can be successfully used in the treatment of several anxiety disorders, including fear of public speaking (e.g. Anderson, Rothbaum, & Hodges, 2003), spider

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phobia (e.g. Carlin, Hoffman, & Weghorst, 1997), claustrophobia (e.g. Botella, Banos, Villa, Perpina, & Garcia-Palacios, 2000), acrophobia (e.g. Choi, Jang, Ku, Shin, & Kim, 2001), fear of flying (e.g. Klein, 2000), post-traumatic stress (e.g. Rothbaum et al., 1999), and fear of driving (e.g. Wald & Taylor, 2000). Although these results suggest that virtual reality is a promising tool for exposure, case research has been limited by small samples and the lack of appropriate controls.

Controlled research has demonstrated that virtual reality, in conjunction with anxiety management strategies, is more effective than no treatment for panic disorder (North, North, & Coble, 1996), acrophobia (Rothbaum et al., 1995b), spider phobia (Garcia-Lopez et al., 2002), fear of flying (Maltby, Kirsch, Mayers, & Allen, 2002), and fear of public speaking (Harris, Kemmerling, & North, 2002). Fewer studies have compared virtual reality to standard in-vivo exposure therapy. The available research evidence suggests that virtual reality is as effective as in-vivo exposure in treating panic disorder (Vincelli et al., 2003), fear of flying (Muhlberger, Wiedemann, & Pauli, 2003; Rothbaum, Hodges, Smith, Lee, & Price, 2000) and acrophobia (Emmelkamp, Bruynzeel, Drost, & Van Der Mast, 2001; Emmelkamp et al., 2002), however remains inconclusive for other anxiety disorders. More randomised controlled trials in which virtual reality is compared with standard in vivo exposure are required.

Summary of Research with Adult Populations

Overall, the research literature with anxious adults suggests that computer and internet-based approaches can be used successfully to deliver CBT in the treatment of anxiety disorders in adults, with a minimal level of therapist support. Randomised

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controlled studies have demonstrated that such approaches are more effective than no treatment, and produce outcomes that, in the long-term, are equivalent to clinic-based treatment (Andersson et al., 2005; Kenardy, Dow et al., 2003; Kenwright et al., 2001; Marks et al., 2004). Positive outcomes have been found for computer- and internet-based treatment of panic disorder (Kenardy, Dow et al., 2003; Klein & Richards, 2001), social phobia (Gruber et al., 2001), generalised anxiety disorder (Newman et al., 1999), specific phobias (Gilroy et al., 2000), obsessive-compulsive disorder (Greist et al., 2002), post-traumatic stress (Lange, Rietdijk et al., 2003) and test anxiety (Buglione et al., 1990). Furthermore, most studies have reported levels of client satisfaction, credibility and dropout that are equivalent to clinic-delivered treatment, with the exception of one study that found dropouts to be higher in the computer treatment (Marks et al., 2004).

Although the results look promising, research has been hampered by methodological limitations such as small sample sizes (Chandler et al., 1988; Chandler et al., 1986; Clark et al., 1998; Klein & Richards, 2001; Lange et al., 2001; Newman et al., 1997; Shaw et al., 1999), non-clinical samples (Kenardy, McCafferty et al., 2003; Lange, van de Ven, & Schrieken, 2003), lack of control groups (Baer et al., 1988; Biglan et al., 1979; Chandler et al., 1988; Chandler et al., 1986; Clark et al., 1998; Harcourt et al., 1998; Newman et al., 1999; Przeworski & Newman, 2004; Rassau & Arco, 2003; Shaw et al., 1999; White et al., 2000; Wilson et al., 1991), and lack of adequate follow-up assessment (Buglione et al., 1990; Clark et al., 1998; Harcourt et al., 1998; Kenardy, McCafferty et al., 2003; Kenwright et al., 2001; Klein & Richards, 2001; Lange et al., 2001; Marks et al., 2004; Przeworski & Newman, 2004; Rassau & Arco, 2003; Shaw et

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al., 1999; Wilson et al., 1991). Furthermore, most studies have evaluated treatment outcome on the basis of self-report questionnaires rather than diagnostic status.

Given these limitations, caution should be taken when interpreting this research and it would be premature to conclude that computer-based interventions offer a reliable method of attaining effective outcomes in the treatment of adult anxiety disorders. It should also be noted that not all studies have reported computer and internet-based interventions for anxiety to be effective (Greist et al., 2002; Smith et al., 1997). There is some evidence to suggest that computer therapy programs have a greater impact when used in conjunction with therapist contact, rather than as a stand-alone approach. For instance, some studies have found higher compliance rates and lower dropout rates for adjunctive computer therapies than sole computer therapies (Agras, Taylor, Feldman, Losch, & Burnett, 1990).

The benefits and promise of computer- and internet-based CBT interventions for anxiety disorders has also been supported in recent meta-analytic reviews conducted by Kaltenhaler et al. (2006), Przeworski, and Newman (2006) and Griffiths and Christensen (2006). Importantly, each of these reviews highlight the need for further methodologically rigorous research to establish the conditions under which computer- and internet-based therapy can be effective. The need for further program development and empirical investigation has also been emphasised in the guidelines for delivering computerized CBT for anxiety disorders, produced by the National Institute for Clinical Excellence (NICE, 2006). It seems that despite the surge in research investigating the efficacy of computerised interventions for anxiety disorders, more methodologically

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sound attempts are required, before firm conclusions regarding the reliability of such interventions can be drawn.

Computer and Internet-Based Therapy with Children

Given the generally positive outcomes for computer-based and computer-assisted treatments of anxiety in adults, together with the high level of accessibility and acceptability of internet-delivered information to children and adolescents, there is a strong case to be made for the development and evaluation of internet-delivery of CBT for child anxiety disorders. However, research into computer-based treatment of child anxiety is still in its infancy. This is surprising, given that children and adolescents are generally highly skilled and experienced in the use of computer technologies (Calam, Cox, Glasgow, Jimmieson, & Larsen, 2000) and the internet is now considered an important method for reaching teenagers (Griffiths & Christensen, 2006; Nicholas, Oliver, Lee, & O'Brien, 2004). A large-scale survey in Australia revealed that in 2003, 95% of children and adolescents (aged 5 to 14 years) used a computer and 64% regularly used the internet (Australian Bureau of Statistics, 2004).

The limited literature evaluating computer and internet-based interventions in the treatment of childhood problems suggests that such approaches offer promise and are worthy of further investigation. Kornfield (1996) found a 13-module computer program based on rational emotive therapy, produced significantly reduced irrational thinking and improved self-esteem, compared to a relaxation placebo, in a sample of 61 adolescents with low self-esteem. More recently, Ritterband et al. (2003) investigated the efficacy of

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an internet intervention for paediatric encopresis. Twenty-four children with encopresis were randomly assigned to either a three-week child-focused internet intervention or no intervention group. The intervention contained three core modules (60-90 minutes to in duration) that comprised psychoeducation and behavioural management techniques. Children in the internet intervention showed significantly greater improvements on outcome measures (i.e. fewer fecal accidents, increased defecation in the toilet and increased unprompted trips to the toilet), than those in the no intervention group. In a follow-up study, Ritterband and colleagues (2006) further investigated their online intervention for childhood encopresis by exploring the added benefits of the presence of audio, graphics (instead of only text) and interactivity (e.g. clickable buttons). They demonstrated that the presence of each of these three components led to positive changes in children's learning of material, motivation and readiness for change (Ritterband et al., 2006).

Computer and Internet Delivery of CBT for Child Anxiety

Few studies have investigated the benefits of computer-delivered therapy for children with anxiety disorders. In a case study by Nelissen, Muris and Merckelbach (1995), two children diagnosed with spider phobia received an individual, one-hour computer-delivered exposure session, which involved the presentation of three different images of spiders that varied in size and movement. Following the computerised exposure session, children received one session of invivo exposure therapy. Treatment outcome was evaluated on self-report and behavioural measures of spider fear at three time points; before treatment, after computerised exposure, and after invivo exposure. For both children, phobic symptom scores remained high following the computerised

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exposure session and only significantly reduced after invivo exposure. The researchers concluded that the computerised exposure treatment did not elicit significant fear to disconfirm children's anxiety beliefs, or for habituation to occur.

Promising findings for the effectiveness of computerised treatments for anxiety has been reported by an Australian study of spider phobic children (Dewis et al., 2001). Twenty-eight children and adolescents were randomly allocated to one of three conditions; invivo exposure, computer-aided exposure or a wait-list control. Both exposure interventions consisted of three, 45-minute sessions. The computer exposure required participants to guide a screen character with spider phobia into different scenarios depicting a picture spider, a plastic spider, a dead spider and a live spider. Clinically significant reductions in self-reported and observer-rated fear were found for children who completed computer-aided exposure, compared to those in the wait-list control, although this difference was not statistically significant. Therapist-aided invivo exposure was found to be superior to both the computer-aided exposure and wait-list control. These results suggest that computer exposure produces lower levels of anxiety arousal and habituation, compared to invivo exposure.

The efficacy of computerised interventions has been investigated for other child anxiety disorders. A single case report investigated the efficacy of an internet-based, CBT program for the treatment of anxiety symptoms in a 7-year-old boy with selective mutism (Fung, Manassis, Kenny, & Fiksenbaum, 2002). The treatment consisted of a 14-week therapist-guided internet intervention based on the Coping Cat workbook (Kendall, 1990). Treatment also involved weekly parent sessions, which covered psychoeducation and training in child management, however it was unclear whether this component was

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presented on the internet, or by the therapist. Significant reductions were found on child, parent and teacher-rated anxiety measures at the end of treatment. However the generalisability of these results is limited as they are based on one subject with selective mutism and the study did not include a control group or follow-up data.

A team of researchers from Macquarie University have recently developed a self-help, cognitive-behavioural CD-ROM program for treating anxiety in adolescents aged between 14 and 18 years (Cunningham, Rapee, & Lyneham, 2007; M. Cunningham, R. M. Rapee, & H. Lyneham, 2006b). The *Cool Teens CD-ROM* consists of 8 modules that take 30-60 minutes to complete over an 8 to 12 week period. This program uses a combination of media formats such as text, audio, illustrations, cartoons, and live video. As part of the development process, Cunningham, Rapee and Lyneham (2006a) conducted a prototype evaluation of one module with 21 adolescents, nine of which had previously attended the Cool Teens group therapy program. They found that users rated the majority of multimedia components positively, with a particular preference for live video. The participants who previously attended group therapy also noted several advantages of the CD-ROM program, such as convenience, privacy and reduced embarrassment related to not speaking in front of others. These findings suggest that computer-based programs may be an acceptable form of treatment to adolescents with anxiety disorders. A clinical study evaluating the efficacy and user acceptability of the *Cool Teens CD* is currently underway.

Another CD-ROM program that has recently been developed for anxious children aged 7 to 13 years is *Camp Cope-A-Lot (CCAL)*; Kendal & Khanna, 2008); a 12 session cognitive behavioural program based on the Coping Cat treatment. *CCAL* utilises

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interactive videos, illustrations, animation, interactive media, as well as built-in homework and rewards systems to create an interactive learning environment for children to master strategies in anxiety management. The first 6 sessions allow children to navigate the program independently at their own pace, whilst the remaining 6 sessions involve a therapist (“coach”) to monitor progress and assist with exposure tasks. The efficacy of *CCAL* as a treatment program for child anxiety has not yet been established, although pilot data is promising.

Development, Efficacy and Feasibility of the BRAVE Internet Program. In addition to these CD-ROM based interventions described above, our research group is conducting a series of studies to investigate the feasibility of using the internet to deliver CBT sessions for child anxiety. Our initial study has examined the efficacy of a partially internet-based CBT program for the treatment of mixed child anxiety disorders (Spence, Holmes, March & Lipp, 2006). In this pilot study, 72 children aged 7 to 14 years diagnosed with separation anxiety, social phobia, generalised anxiety or specific phobia were randomly allocated to one of three conditions; clinic-based group CBT, the same treatment partially delivered via the internet, or a waitlist control. The intervention followed the BRAVE program (Spence, Holmes, & March, 2001), a cognitive-behavioural treatment for childhood anxiety, involving 10 child sessions and 6 parent sessions, plus booster sessions at one and three months after treatment. The anxiety management strategies are represented by the acronym, *BRAVE* - *B* stands for *Body Signs* (recognising physiological symptoms of anxiety); *R* stands for *Relax* (learning to relax by progressive muscle relaxation, guided imagery, and deep breathing); *A* stands for *Activate Helpful Thoughts* (coping self-talk and cognitive restructuring); *V* stands for *Victory Over*

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Fears (overcoming fears by using graded exposure and problem solving approaches); and *E* stands for *Enjoy yourself* (positive self-evaluation and self-reward). The clinic treatment for children involved group sessions of 60 minutes duration, conducted once a week for 10 consecutive weeks. Parent sessions were also 60 minutes in duration, conducted in a group format over 6 weeks.

Families in the combined clinic-internet condition received the same intervention as the clinic group, but half of the sessions were delivered via the internet for parents and children. These internet sessions were designed to be interesting and interactive and included considerable use of colour, animated illustrations, noises, roll-over images, pop-up messages with self-reinforcing statements, and self-assessment quizzes that provided immediate feedback. Pilot work was conducted to ensure readability and comprehension of material. Homework assignments were either completed online or printed out and reviewed at the next clinic session. Program compliance was monitored electronically. Please refer to Spence et al. (2006) for a more detailed description of this intervention.

Data revealed that children in both the standard clinic and the combined clinic-internet conditions showed significantly greater reductions in anxiety from pre- to post-treatment and were more likely to be free of their anxiety diagnoses, compared to the waitlist group. Improvements were maintained at 12-month follow-up for both therapy conditions, with no statistically significant differences in outcomes between interventions.

In addition to examining whether the internet can be an effective way to deliver CBT sessions for child anxiety, our research group was interested to investigate the feasibility of using the internet for the treatment of anxiety in children. Following each

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internet session, parents and children were asked to provide descriptive information about any problems they encountered whilst using the website and what they liked most and least about each internet session. Parents most frequently commented that they liked the content presented in the program. Several parents also noted the ease and convenience of using the internet and the enjoyable format, as strengths of the program. The most common difficulty cited by parents was related to the sound player. Suggestions for improvement related to program content and delivery, and therapist contact. For example, some parents reported child and parent sessions were too long and two parents commented that they would like to have gained more therapist advice and feedback with regard to parenting strategies.

The feedback from children revealed that they most enjoyed the stories and quizzes in the program. Many children also commented that they liked the loud noises, pictures and playing games. Some children commented that pages took too long to load and others noted that they disliked the amount of typing associated with completing electronic forms. Common suggestions for improvement included more games and puzzles, shorter sessions and less typing. Overall, the feedback from children and parents suggested that the internet may be an acceptable mode of treatment delivery for child anxiety disorders. Furthermore, the internet treatment content was found to be highly acceptable to families, with minimal drop out and a high level of therapy compliance.

Given the promising results from this initial study, our research group has recently developed and evaluated a fully internet-based version of the BRAVE program (BRAVE for Children - ONLINE; Spence, March, & Holmes, 2005). The content of the material in BRAVE for Children - ONLINE remained identical to that described by

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Spence et al., (2006), however, all 10 sessions, plus booster sessions were transformed into internet format and completed by families in their own home. Similar to the partial internet program, BRAVE for Children - ONLINE comprised read material, quizzes, games, flash animations, sounds, and question and answer exercises to ensure that participants remained engaged and interested. The program was designed so that participants could only progress through the pages after providing responses to the activities, and participants were only able to access the next session 7 days after the completion of the previous session.

Based on participant feedback from the partial internet intervention, significant changes were made in the technical development of BRAVE for Children - ONLINE. First, the internet site was developed by a professional web design company using sophisticated graphics and design, including flash and animations, to provide a clean, fresh and modern web site. Examples of the updated web pages are shown in Figure 1. Second, additional quizzes, games and sounds were incorporated to stimulate participants' interest, and attempts were made to limit the amount of text on each page. The functionality of the program was also enhanced with sophisticated web programming.

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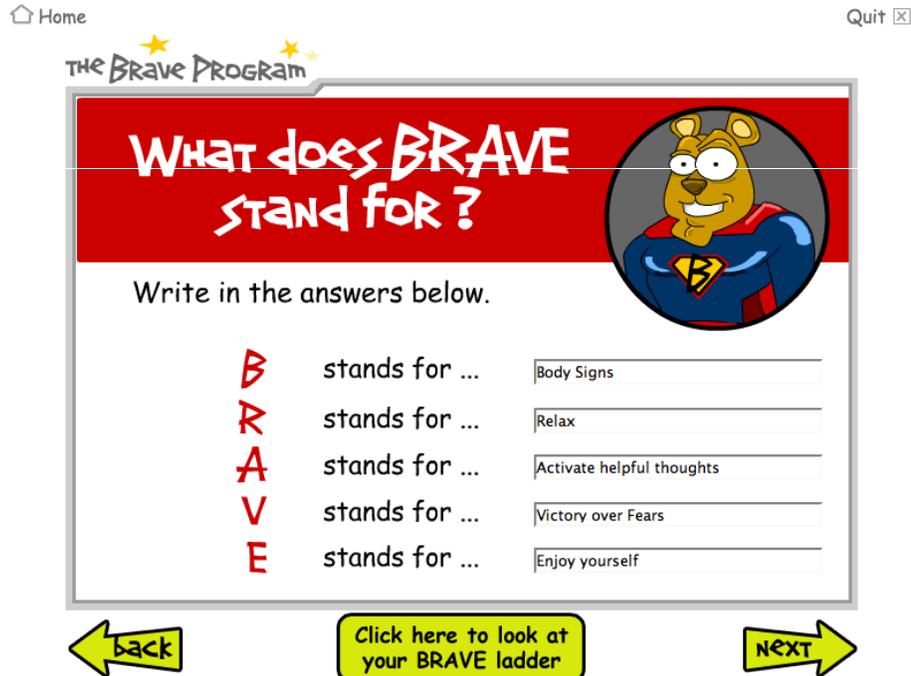
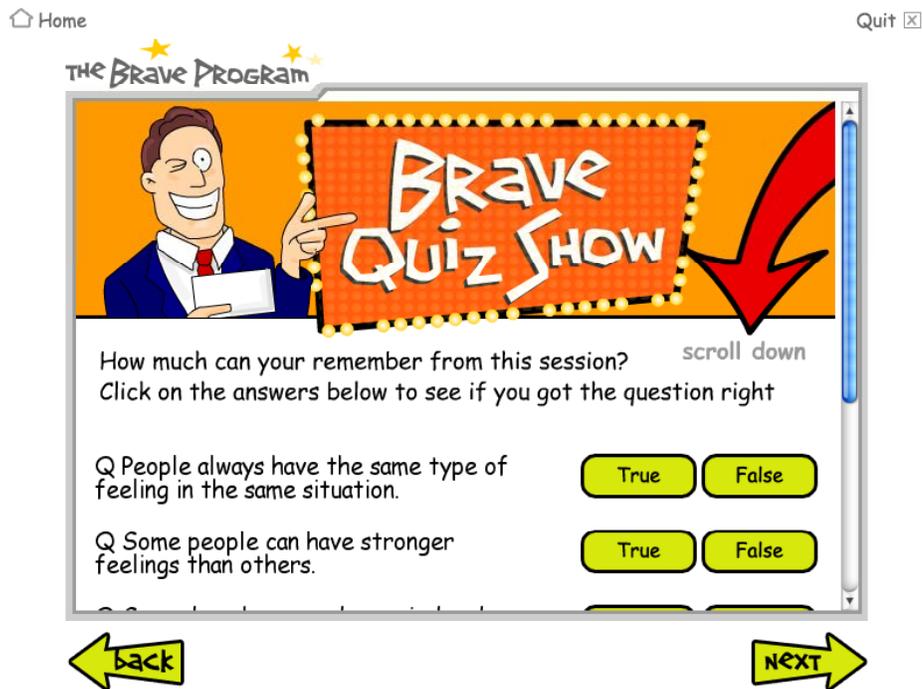


Figure 1. Example screenshots from BRAVE for Children – ONLINE.

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In addition, there were several major challenges in transforming a CBT intervention for anxiety into an entirely internet-based method of delivery. Although some of the CBT techniques used in The BRAVE Program (e.g. problem solving, identification of body cues) were relatively straightforward to transform, other complex techniques (e.g. exposure) were more difficult to translate into internet format. Given the complexity of developing exposure hierarchies, it was deemed necessary to complement the exposure session with a mid-point telephone call with the therapist to ensure understanding and comprehension of the exposure technique and to assist the family in the development and implementation of their individual exposure hierarchy.

Subsequently, BRAVE for Children - ONLINE is a therapist assisted internet intervention, rather than a stand alone self-help intervention. In addition to the mid-point exposure telephone call, participants also completed a short telephone consultation with their therapist before starting the program. The aim of this phone call was for the therapist to introduce themselves to the family, explain the treatment program and assist with any queries. In addition to these phone contacts, the program was also structured so that the therapist could view participants' responses to question and answer activities in the administrator section of the program, and each week provide personalised feedback to the child and parent via email. Although these emails were standardised in format and structure, the therapist was able to personally address the participant and respond to any concerns or difficulties experienced during the session.

An additional challenge in creating an entirely online version of BRAVE was the reproduction of a therapeutic alliance between the therapist and client. A number of strategies were implemented in BRAVE-ONLINE to enhance this therapeutic

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relationship, including provision of immediate and positive feedback in response to session activities, weekly emails from their BRAVE therapist and an online 'getting to know you' exercise where they 'met' their therapist before starting the program. For a detailed description of strategies employed to enhance therapeutic alliance in BRAVE for Children – ONLINE as well as a general description of the full internet program, please refer to Spence et al. (2008).

The efficacy of BRAVE for Children - ONLINE has recently been examined within a sample 63 children aged between 7 and 12 years, with a primary anxiety diagnosis of separation anxiety disorder, social phobia, generalised anxiety disorder or specific phobia (March, Spence, & Donovan, 2008). Children were randomly allocated to one of two conditions; the full internet intervention or no therapy. At post-treatment, results indicated no significant difference between the two groups in terms of the percentage of children free of their primary anxiety diagnoses (WL 10.3% vs. NET 30%), although children in the internet condition did show significantly greater reductions in clinician severity ratings and global assessment of functioning, compared to the wait-list.

Children who received internet therapy also demonstrated significant reductions on parent measures of child anxiety at post-treatment, compared to those who received no intervention. Interestingly, the percentage of children free of their primary anxiety diagnosis was far greater at 6-month follow-up, with 75% of children in the internet condition no longer meeting diagnostic criteria. This rate of improvement is consistent with those found elsewhere in the anxiety literature (see James, Soler, & Weatherall, 2005 for a review). Improvements were also found for ratings of diagnostic severity, global functioning and on some self-report measures of anxiety at 6-month follow-up.

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However, the lack of a comparison group at the follow-up period makes it difficult to determine whether these positive effects are due to the intervention, or simply the passage of time. Furthermore, poor compliance with the internet intervention may have impacted on initial findings. For instance, only 33.3% of children and 60% of parents had completed all of the internet sessions by the post-treatment period, whereas by 6-month follow-up the majority of children (62%) and parents (72.3%) had completed these sessions. This lag in session completion may account for the lack of immediate findings for diagnostic status at post-treatment. Despite initial low compliance with internet sessions, the intervention was considered credible and acceptable by families, with high rates of program satisfaction and minimal rates of attrition.

The next step in our research has been the development of a full internet intervention for adolescents. BRAVE for Teenagers – ONLINE (Spence, Holmes, Donovan, & Kenardy, 2006) mirrors the child internet program in session content and structure but takes into account the developmental differences in adolescence, in terms of cognition, emotion and behaviour. The material in BRAVE for Teenagers – ONLINE is presented in a more sophisticated manner, with graphic, content and scenarios suitable for youth aged between 13 and 18 years. Example screenshots from BRAVE for Teenagers – ONLINE are shown in Figure 2. For a detailed description of this intervention, please refer to Spence, et al. (2008).

The efficacy of BRAVE for Teenagers – ONLINE is currently being evaluated in a randomised controlled trial comparing the internet intervention to standard clinic treatment and a wait-list control. A second study is investigating the predictors of treatment outcome, in order to determine the characteristics of teenagers and their

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families that may predict more favourable outcomes to online therapy. Results from both trials are pending.

Home Quit

THE BRAVE PROGRAM

Social Anxiety

(so-cial) adj.

Some teenagers are scared of interacting with people, or being the focus of attention.



Tian is 15. He feels really nervous about doing talks in front of the class. Tian worries that he will stuff up and that all the kids will laugh at him and think he's a loser.

NEXT

back

Home Quit

THE BRAVE PROGRAM

HOUSE of ROCK presents

how much can you remember?

THE QUIZ Show

Let's see how much you can remember from this session...

Q1. Many teenagers experience anxiety.

Q2. Teenagers may suffer from different

back **NEXT**

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Preliminary support for the efficacy of this intervention has been provided by a single case study of a 17-year-old female diagnosed with social phobia, generalised anxiety and specific phobia of darkness (Spence et al., 2008). At the end of treatment the participant no longer met diagnostic criteria for *any* anxiety disorder. Significant improvements were also found on self-report indicators of anxiety, clinician ratings of diagnostic severity, and measures of overall functioning. Although these results appear promising, conclusions regarding the efficacy of this intervention cannot be drawn until results from the randomised controlled trial are available.

In summary, there are a number of programs currently being developed which examine alternative methods for delivering CBT interventions to children and adolescents with anxiety disorders. Some include computer, CD-ROM based programs (Cunningham et al., 2007; Cool Teens CD-ROM; Cunningham et al., 2006b; CCAL; Kendall & Khanna, 2008), while others include programs delivered via the internet (BRAVE for Teenagers - ONLINE; Spence et al., 2006; BRAVE for Children - ONLINE; Spence et al., 2005). Preliminary results suggest that both CD-ROM and internet-based methods of delivery might be acceptable to youth with anxiety disorders (Cunningham et al., 2006a; March et al., 2008; Spence et al., 2008; Spence et al., 2006), however results of randomised controlled trials are only available for BRAVE for Children – ONLINE and the partial internet intervention described by Spence et al. (2006). To date, results indicate that internet-based therapy may be effective for a significant proportion of children suffering from anxiety, whether sessions are delivered partially (Spence et al., 2006) or entirely over the internet (March et al., 2008). However, firm conclusions cannot be drawn until the results of further trials are available.

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Future Directions in Internet-Delivery of CBT for Clinically Anxious Children

The available literature suggests that use of the internet might be a feasible way to deliver CBT for the treatment of child anxiety, either as a stand-alone internet treatment or a combined clinic and internet program. However it remains to be determined whether the full program can be delivered effectively using this medium as compared to a clinic-based treatment program. Indeed, the next study conducted by our research team examines the benefits of full-internet therapy compared to clinic-based CBT and a waitlist control for adolescents suffering from anxiety disorders. Such trials need to be replicated with younger populations as well, to determine whether an internet approach offers a viable alternative to traditional clinic-based treatments.

Another challenge in the next phase of our research is to investigate whether internet approaches may also be effective when completed as a self-help treatment by families, without the assistance of a therapist, as the present version of the BRAVE program requires. The major challenge in producing an entirely self-help intervention is to find an effective way of guiding children and their parents through the development of an exposure hierarchy, given the complexities of hierarchy design and the high level of comorbidity of anxiety disorders in children. It is also important to examine whether the therapeutic alliance can be re-created in online interventions, by comparing the quality of the therapeutic relationship between participants receiving internet and clinic therapy. Given that this factor has been shown to be associated with treatment outcome (Creed & Kendall, 2005), it is important to determine ways of enhancing the working alliance between children and their therapist within online interventions. A further challenge is to

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include methods that facilitate treatment adherence and encourage children and their parents to persist with a self-help approach to treatment. Despite the inclusion of techniques such as the use of personal names in emails, provision of immediate and positive feedback and rewards following the completion of on-line tasks, compliance with sessions was still relatively low in BRAVE for Children – ONLINE, which may have contributed to the lack of significant findings at post-treatment. Alternative methods for enhancing compliance with sessions need to be explored to determine whether increased compliance can enhance the effectiveness of internet-based interventions, particularly in the short term. Finally, another research question that remains to be examined is the level of personalized contact (via telephone or email) that is required, in order to optimize treatment outcomes.

Conclusions

Despite the existence of highly effective clinic-based treatments for child anxiety and children's skill and interest in computer applications, it is only recently that researchers have started to examine the feasibility and efficacy of computer-delivered therapy for childhood anxiety. Given the positive findings with adults, there is strong justification for the development and evaluation of computer-delivered CBT for child and adolescent anxiety disorders. One advantage of the late development of research into computer-based treatments for child and adolescent anxiety is that researchers can draw significantly on the knowledge gained from the adult literature. The limited data available on computer-based treatment of child anxiety suggests that it is feasible to deliver CBT using the internet, with a high level of parent and child satisfaction associated with both partial and full internet delivery. For the CBT intervention delivered partially over the

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internet, there were no significant differences in treatment outcomes, in comparison to full clinic delivery of the program (Spence et al., 2006). For the one trial examining CBT delivered entirely over the internet however, rates of improvement were lower at post-treatment, but similar at 6-month follow-up compared to more traditional forms of face-to-face therapy, as described elsewhere in the literature (March et al., 2008). At present, there is insufficient evidence to enable us to draw firm conclusions about the feasibility and efficacy of full-delivery of CBT programs for child anxiety using computer technologies, although it seems that internet approaches may be acceptable and beneficial for a significant proportion of children with anxiety.

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Providing an Independent Second Opinion for the Diagnosis of Autism Using Artificial Intelligence over the Internet

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Abstract

In many fields, including the diagnosis of Autism, there are barriers which greatly reduce the likelihood of clinicians obtaining an independent second opinion. Barriers include cost and the availability of other specialist clinicians. Nevertheless, having regular independent second opinions for the diagnosis of Autism is professionally indicated. The use of new technology as a means of providing an independent second diagnostic impression for Autism is reviewed in this article. The use of technology may provide independent clinical assessment thus adding to diagnostic accuracy. Challenges regarding the use of technology to provide independent second opinions include the possibility of individuals and relatives engaging in self diagnostic activities.

Independent Second Opinions

It is good clinical practice for clinicians to get an independent second opinion when they are not certain about a diagnosis. Even if a clinician is relatively certain of their diagnosis an independent second opinion in may give them cause to think again. Ideally the clinician obtains the independent second opinion from another clinician who is a recognised expert in the area of diagnosis in question. Also ideally the second opinion clinician is blind to the diagnosis, thoughts and actions of the first opinion clinician and so is therefore unbiased, by these, in making their diagnosis.

Given the benefits of clinicians obtaining an independent second opinion, why then does this practice not occur more often. In many fields (the diagnosis of Autism is one of them) there are barriers which greatly reduce the likelihood of clinicians obtaining an independent second opinion. In the case of the diagnosis of Autism, these barriers are:

- A second opinion from a second clinician necessarily involves, the client (and in most cases their family) attending the practice of the second clinician on a second occasion. This can be both inconvenient and costly for the family
- Two opinions will generally cost twice as much as one opinion. Someone, whether it be the client, their family, a government or some combination, will in the end pay this bill and this naturally raises a question in the mind of this payer as to the amount of increased benefit brought about by a double cost.
- An “independent” second opinion by a second clinician in the case of a diagnosis like Autism may be not be practical to obtain. There is foreseeable risk that family members who attend the second clinician’s assessment will

“leak” or at least hint the first clinicians opinions or diagnosis to the second clinician.

- Finally, clinical experts in any area (and Autism Diagnosis is no exception) are thin on the ground. Those that exist are usually busy providing first opinions to their clients and would not realistically have the time to provide numerous second opinions to their colleagues. If obtaining an independent second opinion from a second expert clinician becomes a common practice, then there will need to be an increase in the number of practicing expert clinician which is directly proportionate to the increase in this practice.

Despite these barriers, obtaining an independent second opinion for difficult diagnoses remains a desirable goal. In some clinical areas, such as Anatomical Pathology second opinions are routine sought. It is common practice in the screening of Pap Smears for cervical cancer for all cases identified as positive and a randomly selected proportion of cases identified as negative by a first clinician to be re-screened by a second clinician.

This article describes a method for providing an independent second opinion in the case Autism Diagnosis.

Diagnosis of Autistic Disorder

Autistic Disorder is a defined developmental disorder (DSM-IV, APA 1994), which is characterised by:

- Onset before the age of 2 years, often become evident by then.
- poor social interaction compared to aged peers
- language which both delayed in development and disordered in its form.
- a range of odd behaviours

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- a profile of uneven mental abilities (marked differences in strengths and weaknesses)

It is a serious disorder, it is lifelong and it is disabling. Persons with Autistic disorder need special education during school aged years and will generally need support as adults. Importantly early diagnosis is crucial, because symptoms and subsequent disability can be ameliorated by early intervention. The earlier intervention can be provided the better the long term outcome. The provision of intensive early intervention to children with Autistic Disorder is expensive and a diagnosis provided by an appropriate clinical expert (child psychiatrist, developmental pediatrician or psychologist) is often an essential pre-requisite.

Autistic Disorder has a prevalence of 15 – 50 per 10,000, in very young children, presents similarly to a range of other Autistic Spectrum Disorders (prevalence 1 in 100) and to some other Developmental Disorders (prevalence 2 – 3 per 100). Diagnosis is not straight forward at very early ages and expert clinicians often experience uncertainty.

Developmental Behaviour Checklist (DBC)

A 96 item *parent completed* checklist, developed by Einfeld & Tonge (1995), with funding from National Health & Medical Research Council. The DBC assesses behavioural and emotional problems in children and Adolescents with a Developmental Disorder (age 2 to 18 years). Parents or carers are asked to rate a child on 96 behavioural descriptors using a three point scale (0,1,2).

The DBC has good reliability and validity, and it has been used in numerous studies published in peer reviewed scientific journals.

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The DBC is primarily used to describe and quantify behavioral and emotional problems in children and adolescents with a developmental disorder. A total score (interpreted via a set of norms) is used to quantify the overall severity of the child's behavioural and emotional problems a set of six subscales (derived by factor analysis) is used to profile and quantify (via norms) specific areas of concern for the child.

More recently, the ability of information captured by the DBC to aid in diagnostic decision making for Autistic Disorder, particularly in very young children, has been explored.

Artificial Neural Networks

Artificial Neural Networks were initially developed by researchers attempting to simulate the functioning of neurons in the Central Nervous System (CNS) of animals. The CNS is effectively a network of neurons. One of the questions researchers and theorists have attempted to answer is where in the CNS is learning stored when an animal learns a new skill or behaviour. Hebb's (1949) theory was that the synapse (the point at which one neuron connects to another neuron) is the key location, within a biological neural network where new learning is stored. More specifically he proposed that changes to the strength (propensity to transmit a signal from one neuron to another) of the connections between neurons in a network underlie learning by animals that have a CNS.

Motivated to test Hebb's theory, experimenters in the 1960s, 1970s simulated neurons (at first mechanically, but later as software emulations on a computer) and interconnected these into networks with topologies (connection schemas) similar to those which have been observed in vivo. It was first demonstrated that the behaviour of each

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network as a whole (or more specifically the relationship between the inputs and the outputs to a network) was always consistent in that the same input always produced the same output, but different inputs could produce different outputs. That is each network had its own consistent set of input-output pairs. Furthermore it was demonstrated that by altering the strength of synaptic connections in a particular network, its behaviour could be altered, so that it exhibited a different set of input-output pairings. In learning, such as is demonstrated by classical conditioning or by operant conditioning, animals (including humans), learn to produce a particular behavioural response (an output of the CNS) in response to a particular stimulus (an input to the CNS). The basic problem of how exactly the CNS does this has (and still does) puzzle researchers and theorists.

Working more in a statistical framework, Werbos (1974) developed a technique, known as back-error propagation, which can be used to adjust the strength of synaptic connections between artificial neurons organized into a particular network topology known as a Multi-Layer Perceptron (MLP), so as to make the MLP network learn from experience. The basic process is that the MLP is presented an input and in response the MLP generates an output. The output is the direct result of the input being processed by the MLP which transmits information from neuron to neuron using a defined set of weights. Each weight represents the synaptic connection strength between a specific pair of neurons in the MLP. As well an input the MLP is presented with a desired output (that is how the MLP should have responded to this particular input). The back-error propagation process begins by quantifying the amount of error (or difference) between the output the MLP actually produced and the output the MLP should have produced. If the difference between actual and desired is large then the quantitative size of error is

large. If the difference between actual and desired is small then the quantitative size of error is also small. Working backwards through the network, the back-error propagation algorithm then adjusts each weight in the MLP by an amount proportionate to the size of the error (a large error leads to large adjustments and a small error leads to small adjustments) so that next time the same input is presented the size of the error between the actual output and the desired output is reduced. If the same input-output pair is presented and back-error propagated many times, the network eventually learns to produce the desired output in response to the specified input. If there is a set (several or many) of input-output pairs and they are individually presented and back-error propagated to an MLP network many times, then the MLP will eventually learn the whole set and always produce the correct output response for each specific input.

The upshot of all this is that it has been empirically demonstrated that MLP neural networks using a back-error propagation algorithm for weights adjustments can learn any finite set input-output relationships. White (1989) later provided a mathematical proof of this proposition. Incidentally these findings have been statistically interesting and have led directly to the development of many statistical applications based upon MLP neural networks (e.g. the Autism Diagnosis application discussed later in this article), but they proved to be a dead end in testing Hebb's theory because the concept of back-error propagation is biologically implausible. In order for a mechanism similar to back-error propagation to exist in the CNS there would need to be two way transmission of information between neurons. Our current knowledge suggests that biological neurons are able to transmit information only in one direction.

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The importance of MLPs and back-error propagation in the current context is that it allows for the possibility of creating an artificially intelligent system, which can be trained to make a diagnosis of Autistic Disorder (the output) on the basis of a set behavioural symptoms such as DBC items (the inputs), by using a set of cases organized as a set of input-output pairs.

For a more detailed exposition of MLP neural networks, back-error propagation and their uses in diagnostic decision making see Florio et al. (1994), Cross et al. (1995), Florio et al. (1997) or Florio (2004).

Diagnosis of Autistic Disorder using a Neural Network

From the Monash Medical Centre Autism Clinic in Melbourne and the Australian Child Development Study, we obtained 638 cases, 50% with Autistic Disorder, 50% with a Developmental Disorder but not Autistic Disorder. Expert clinicians (Child Psychiatrist or Clinical Psychologist) who were experienced in Autism made all the 'gold standard' diagnosis used to train the Neural Net.

Secondly we obtained another cross-validation dataset of 100 cases (62% Autistic Disorder, 38% Developmental Disorder but not Autistic Disorder) collected in Sydney, at 3 separate child development clinics (Leichhardt, Tumbatin and Kogarah clinics).

For both datasets the variables were 96 parent\carer completed DBC items, Age, Sex, IQ level (coded as severely disabled, moderately disabled, mildly disabled, or normal range) and Autistic Disorder Diagnosis (coded yes, no according to an expert clinician diagnosis using DSM-IV criteria)

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The aim of the study was to compare a MLP type Neural Network to a Logistic Regression (Hosmer & Lemeshow, 1989), to see if the MLP Neural Net was any better as a diagnostic classifier.

For both the Neural Network and the Logistic Regression the first dataset (N=658) was used to derive diagnostic classifiers. Area under the ROC curve (Swets, 1988) was used as the comparative measure. In both cases the Area under the ROC curve was adjusted (attenuated for optimism) by a 100 x bootstrapping procedure (Efron & Tibsharani, 1993). The adjusted ROC curve value gives a good approximation to how each diagnostic classifier will perform on future cases.

The second dataset (N=100) was used to comparatively evaluate the performance of both classifiers (Neural Network and Logistic Regression) on set cases not previously used to derive either classifier (cross-validation).

Results - Neural Net Vs Logistic Regression

For the Melbourne dataset (N = 638)

	<u>Neural Net</u>	<u>Logistic Regression</u>
% Correct	92%	83%
ROC Curve	.98	.91
Adjusted ROC	.93	.88*

* Difference significant at $p = .001$, using the Wilcoxon Test

Conclusion

The Neural Net is a better classifier than Logistic Regression for this particular diagnostic problem

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Independent Multi-site Cross-validation

In order to assess how well the Neural Net would perform in ‘real life’ at different clinics, we tested it on further 100 cases (62% with Autistic Disorder) seen at 3 Sydney child development clinics (Grosvenor, Tumbatin and Kogarah). Expert clinicians (Developmental Pediatrician or Clinical Psychologist) who were experienced in Autism made all the ‘gold standard’ diagnosis against which the Neural Net was compared.

Overall accuracy	80%
Sensitivity	92%
Specificity	70%
ROC Curve	.88*

* **Note** in this analysis, because we are using a cross-validation dataset, we do not need to adjust the Area under the ROC Curve value by bootstrapping.

Conclusion

In the real world, the DBC-Neural Net diagnosis of Autistic Disorder is 80% as accurate as that provided by very experienced clinicians.

Comparison to Other Checklists and Techniques

Clinicians already have a range of diagnostic tools in this area

Method/Practice	Validity	Cross-Validity
DSM-IV	Not Applicable	85% (agreement between Clinicians)
CARS	82%	?
GARS	90%	?
ADOS	95%	?
ADI-R	92%	?
DBC-ASA	78%	?
DBC-NN	92%	80 %

Conclusion

The DBC-NN compares favourably with other commonly used tools and practices in terms of validity. None of the other tools has used a cross-validation test, which gives the most accurate index of a diagnostic classifier's ability to classify. However agreement between clinicians on a diagnosis of Autistic Disorder was found to be 85% in the DSM-IV field trial studies. Since a clinical diagnosis using DSM-IV criteria is the gold standard for diagnosis of Autistic Disorder, then 85% is the maximum possible cross-validity agreement any other method could have. The DBC-NN at 80% is close to this theoretical ceiling and therefore performing relatively well.

Summary DBC-NN

- Parent completes a checklist.
- The DBC-Neural Network makes an Autistic Disorder Diagnostic decision which is at least 80% as good as that of any very experienced expert clinician.
- It is almost as good as having a second independent clinician, as on average clinicians will only agree with each other on a diagnosis of Autistic Disorder 85% of the time, when blind to the diagnoses of other clinicians (DSM-IV field trial).
- Any clinician can use the DBC-NN as a blind independent 2nd opinion.
- Unlike most other methods, the DBC-NN is totally independent of the clinician, as it is based on independent parent observations.

Internet Diagnosis

We currently sell a software package to clinicians, but this is problematic because:

- we need to physically distribute disks to users
- provide users support with installation issues
- can only target one platform (Windows)

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- Can only upgrade users every few years due to effort involved

A natural next step is to use the Internet to give clinicians access. In this mode:

- The parent or carer completes the DBC checklist online
- Clicks a submit button
- A comprehensive report, including an Autistic Disorder diagnostic decision is either sent back as a web page or emailed to the clinician.

We see other advantages to using the net. We can update the application as required without a distribution cost. We can accumulate datasets which:

- Tell us how our diagnostic application is being used, how often, by whom and with which clients.
- Can be used to update our normative datasets

We can also continuously refine the diagnostic accuracy of the application by retraining the neural network on progressively larger datasets, if clinicians provide us their first opinion diagnosis. This akin, to how a clinician gains experience and refines their diagnostic skills in the course of a clinical career. The main difference is that in 30 year career a clinician may see at most a few thousand cases. The neural network could see tens of thousands in a year. From this 'experience' base and trained by the first opinion diagnoses of hundreds of expert clinicians from around the world, a popularly used neural network would become the best diagnostician for this particular diagnosis over time. This has already happened in the case of PAPNET (Kok & Boon, 1995) a neural network which diagnoses abnormalities in PAP smears, which has progressed

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from being used as second opinion system to a first opinion in some health services (Cenci et al 2000).

Challenges

- Avoiding 'self'-diagnosis by parents
- Avoiding inappropriate use by clinicians, in particular screening for Autism, which will yield a large proportion of 'False Positives'
- Developing an e-commerce model that:
 - works for us,
 - works for clinicians and
 - works for clients
- Overcoming 'change in practice' inertia amongst clinicians.
- Issues about who 'owns' the data, do we save it, do we store it for clinicians, what ownership rights do clients (parents) have, how do we get consent for ongoing development ?

Future Developments

If we store data and get selected clinicians to send us their diagnosis, we have a continuing supply of new cases, with DBC data and high quality diagnoses. We can use these to continuously, incrementally improve diagnostic accuracy, by periodically retraining the neural net on ever larger datasets

Potentially over time the neural net absorbs the collective diagnostic expertise of a large number of clinicians from around the world. The DBC-NN can then potentially move from being a 2nd opinion system to becoming 1st opinion system (this is happening now with PAPNET, see Cenci et al [2000]).

AI - Internet → Synergy

Artificial Intelligence (AI) and the Internet are both recently emerged computer-based technologies. As such there is a natural opportunity for synergy.

Neural Networks, are computer-based AIs which can learn from experience. If we give a neural network a large number of real-world experiences and at the same time give them feedback as to how they should best respond to each of these experiences, then the neural network can learn to solve real-world problems. What they learn is how to best respond to different real world generated stimuli. For example in this article we describe how a neural network was trained to respond (with 80% accuracy compared to an expert clinician) to a set of parent\carer ratings of a child's behaviour with a diagnostic decision as whether the child has a diagnosis of Autistic Disorder or not. Numerous other examples of diagnostic decision-making by neural networks can be found in Florio et al (1994), Florio et al (1997), Florio (2004).

The Internet flexibly connects computer systems from millions of locations around the world. So the Internet potentially gives an AI access to a large number of real-world experiences. In the virtual space of the Internet a single AI is able to make numerous and distant real world connections

Therefore an Internet based AI which is able to receive real-world exposure and feedback, in a particular domain is likely to continuously learn to better respond to that domain of experiences it is exposed to, in much the same way as a clinician, professional, tradesperson or other 'expert' learns on the job with the help of supervisors and colleagues.

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In our case, Autism Diagnosis, we want to develop a Neural Network AI, which is able to continuously improve, as it practices (and learns), seeing thousands of patients in hundreds of clinics and absorbing the diagnostic wisdom of hundreds of experienced clinician 'colleagues'.

Information & Links

- We are attempting to develop the site now, Details will be announced on <http://florio.com.au>

- The Developmental Behaviour Checklist homepage is: <http://www.med.monash.edu.au/psychmed/units/devpsych/dbc.html>

- Annotated bibliography of research and publications using the DBC: <http://www.med.monash.edu.au/psychmed/units/devpsych/bibliography.pdf>

- Similar sites up & running now are:
 - <http://www.prostatecalculator.org/>
 - <http://www.aseba.org/PRODUCTS/weblink.html> (CBCL)

- A full downloadable copy of Tony Florio's PhD thesis containing a full exposition of Neural Networks and the development of the DBC-NN is available at: <http://florio.com.au>

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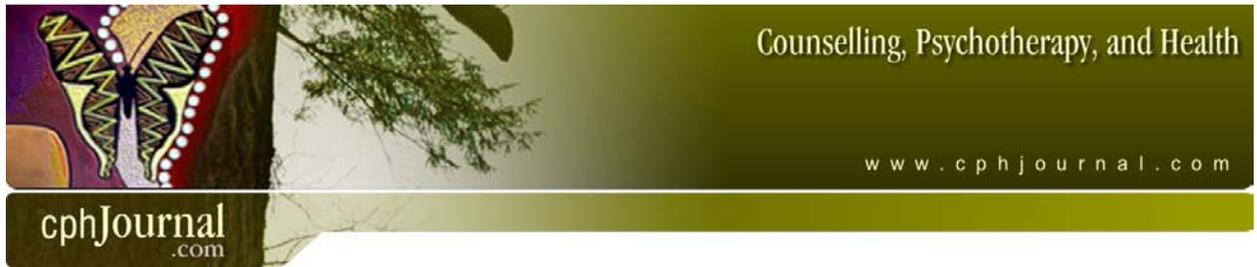
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The Nature and Accuracy of Alcohol Dependence Information on the Internet

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Abstract

The internet has become a widely used and valued source of information over the last decade. This is despite the fact that current research warns that the information presented on the internet on health related issues tends to be suspect. To date no research has examined the nature and accuracy of Alcohol Dependence (AD) on the internet. The current research was designed to address the presentation of this important health issue on the internet. An examination of 210 AD websites show that AD information on the internet does not cover generally accepted scholarly biopsychosocial AD material. Additionally, information presented tends to be in a format not accessible to the general population in terms of reading level. Thus, AD internet information is suspect in its content and form. Recommendations are provided regarding AD internet information. Professionals and lay people alike are warned against relying on AD information on the internet as bibliotherapy resources.

Introduction

The internet has grown in its usage exponentially. According to the Australian Bureau of Statistics (ABS) it was estimated that 60% of Australian households had home internet access during the 2005-06 period (ABS, 2006). Eysenbach (1998) describes the internet as a compelling source of information due to its immediacy and interactive nature. Furthermore, the internet may lead to feelings of greater autonomy for the user in addition to providing access to information seldom otherwise available (Theodosiou & Green, 2003). As a source of information, the internet may now be the largest source of bibliotherapy, provider of health information, in the world.

Current research has indicated that a significant portion of internet consumers are occupied in obtaining information regarding health related issues (Borzekowski & Rickert, 2000; Gray, Klein, Noyce, Sesselberg & Cantrill, 2005; Martin, 2003; Morahan-Martin, 2004). Morahan-Martin (2004) estimated that approximately six million people in the United States of America (USA) search for health related information online each day. Moreover, there is an increasing tendency of people bringing articles taken from websites to medical appointments (Murphy, 2003; Theodosiou & Green, 2003). As stated by Newman (2004, p. 141), "All indicators suggest that technology may be an inherent part of psychotherapy delivery in the next decade".

Nevertheless, the quality of websites can vary substantially due to the absence of universal legislation to regulate internet information. To date there is a paucity of published studies examining the precision and reliability of health information on the internet. The few studies that have investigated the nature of health websites relate to specific concerns; for example, information relating to tobacco use (Pelling, 2006),

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cancer (Matthews, Camacho, Mills, & Dimsdale, 2003), melanoma (Bichakjian et al., 2002), depression (Lissman & Boehnein, 2001), and self-harm (Prasad & Owens, 2001).

Further research is necessary to investigate the accuracy of an entire range of health related topics evident on the internet (Benigeri & Pluye, 2003; Lissman & Boehnein, 2001). Consequently, the current study addresses the scant empirical research with regards to health information on the internet via an investigation into the nature and accuracy of Alcohol Dependence (AD) information on the internet.

Bibliotherapy Research

Although no one agreed upon definition of bibliotherapy exists (Richards, 2004), the essence behind what is meant by bibliotherapy is “the guided reading of written materials in gaining understanding or solving problems relevant to a person’s therapeutic needs” (Riordan & Wilson, 1989, p. 506). The use of bibliotherapy, or application of reading materials, in client education has been common for a number of years in psychological circles (Adler & Foster, 1997; Apodaca & Miller, 2003; Holman, 1996) and is seen as having many positive effects on client change (Adams & Pitre, 2000; Apodaca & Miller, 2003).

Bibliotherapy has a number of identified benefits including the fact that it can be highly accessible via email, retail book outlets, and the internet; is anonymous in nature in that others do not have to be involved; is cost-effective; may lead to professional treatment seeking; can encourage self-responsibility and empowerment as well as self and other awareness and empathy for various circumstances; and can facilitate an

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emotional adjustment lowering stress and anxiety and increasing coping skills (Adams & Pitre, 2000; Adler & Foster, 1997; Apodaca & Miller, 2003; Heather Whitton, & Robertson, 1986; Holman, 1996; Lenkowsky, 1987; Newman, Erickson, Przeworski, & Dzus, 2003; Pardeck & Pardeck, 1998; Richards, 2004; Riordan & Wilson, 1989).

Apodaca and Miller (2003) demonstrated the efficacy of bibliotherapy in effecting change with clients diagnosed with AD, with a relatively large effect size of 0.8, which is comparative with that of extended treatment. Maintenance of change gains have consistently shown very little reversal of the initial reductions in drinking associated with bibliotherapy for extended periods (i.e., up to 8 years) (Apodaca & Miller, 2003). Indeed, one study demonstrated bibliotherapy to show greater maintenance of gains in sobriety than extended therapy (Apodaca & Miller, 2003).

Conversely, bibliotherapy has drawbacks including the fact that the efficacy of such outside the context of health services, and apart from its use with some specific topic areas, is unknown (Adams & Pitre, 2000; Apodaca & Miller, 2003; McKendree-Smith, Floyd, & Scogin, 2003; Richards, 2004). Some also caution that many self-help books mistakenly claim to be treatment when they are actually educational and are designed to be used as an adjunct to therapy (Adams & Pitre, 2000; Riordan, Mullis, & Nuchow, 1996). At a user level, perceptions of self-help books may be unrealistically high given the power the published word has for many in our society. Also, clients may too become overwhelmed by some books given their volume and the reading level required for comprehension (Adams & Pitre, 2000; Riordan et al., 1996). Nevertheless, bibliotherapy continues to be in common use in psychological circles.

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The increase in popularity of the internet has added a level of complexity to the use of bibliotherapy in that lay individuals can now access psychological and health information for little or no cost on the internet independent of professional assistance or having the materials reviewed by journal editors or publishing companies (Cline & Haynes, 2001; Morahan-Martin, 2004; Rabasca, 2000; Theodosiou & Green, 2003). As a result, individuals may be gathering information that is too difficult, too detailed, or too simple and cursory to be of use or at such a reading level that the individual accessing the information is not able to comprehend the information or that the information is too simplistically presented. Additionally, the accuracy (Benigeri & Pluye, 2003; Bichakjian et al., 2002; Bower, 1996; Cline & Haynes, 2001; Craigie, Loader, Burrows, & Muncer, 2002; Croft & Peterson, 2002; Eysenbach, Powell, Kuss, & Sa, 2002; Fallis & Frické, 2002; Impicciatore, Pandolfini, Casella, & Bonati, 1997; Lissman & Boehnlein, 2001; Matthews et al., 2003; Morahan-Martin, 2004) as well as the intellectual accessibility as measured by reading level (Adkins, Elkins, & Singh, 2003; D'Alessandro, Kingsley, & Johnson-West, 2001; Freda, 2005; King, Winton, & Adkins, 2003; Singh, 2003) of internet information may be variable and thus questionable in its application with clients.

Alcohol Dependence Information

Although the term “Alcoholism” was dropped with the introduction of the *DSM-III* (Saunders, 2006) in favour for two distinct categories labeled “Alcohol Abuse” and “Alcohol Dependence”, for the purposes of the current study the term “Alcoholism” will be used in conjunction with “Alcohol Dependence”, due to the familiarity of the term to

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lay people searching for information on the internet. AD and Alcoholism are important difficulties in our society with 4.1% of the population in Australia (Proudfoot, Baillie, Teesson, 2006) and 3.8% in the U.S. (Hasin, Bridget, & Grant, 2004) being diagnosed with such disorder. The *Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR)* (American Psychiatric Association [APA], 2000) reports the prevalence of current AD to be approaching 5% of the general population. Indeed, current U.S. research sampling 18-29 year-old adults (N=8,666) found the prevalence of AD according to *DSM-IV-TR* criteria to be as high as 9.2% (Dawson, Grant, & Stinson, 2004). When one considers that health related items are significant matters of interest to search on the internet (Gray et al., 2005), it is clear that there are many individuals searching for AD information on the internet.

The present study examines the nature and accuracy of AD information on the internet. Such an assessment of the nature and accuracy of psychological related information on the internet is important as this information is accessed and used in various ways by a number of individuals. If the information is to be of use it must be both accessible and accurate. If the material is not accessible to the average Australian or American which is rated ninth (see Appendix A) and approximately eighth to ninth (Doak, Doak, & Root, 1996) grade level, respectively, or if the information is found to be comprehensively inaccessible or inaccurate then its usefulness is in question and, indeed, the information could be judged as useless or worse harmful if not both accessible and accurate.

As the current research is concerned with the nature and accuracy of AD information on the internet an outline of the main aspects of generally accepted

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knowledge relating to this diagnosis is appropriate and is provided as follows. For a full review of generally accepted knowledge relating to AD, the reader is referred to Cornish (2007). It is this summary information which was used in the current study to determine the level of accuracy of the websites subsequently examined. AD and Alcoholism information will be reviewed in a six part fashion: diagnosis, biological aspects, psychological aspects, social aspects, treatment approaches, and prognosis.

Diagnosis. Two foremost diagnostic tools are available to both the practitioner and researcher alike: The *Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR)* (APA, 2000), and the *International Classification of Diseases (ICD-10)* (World Health Organisation [WHO], 1992). The APA (2000) recommends reference to the criteria for Substance Dependence when considering diagnoses of AD. The dependence syndrome is characterized by symptoms of physiological tolerance and/or withdrawal. Tolerance may be defined by either the need for a markedly increased quantity of the substance (i.e., alcohol) to achieve intoxication or the desired effect, or a markedly diminished effect with continued use of the same amount of alcohol (APA, 2000). Withdrawal is manifested by either a characteristic withdrawal syndrome, or alcohol is consumed to relieve or avoid withdrawal symptoms (APA, 2000). The APA (2000), in addition to physical indicators of dependence, recognize that the features of quantity of consumption, control or lack thereof, time spent in activities associated with alcohol consumption rather than appropriate activities, social difficulties and occupational and recreational decline, and the continuance of drinking despite knowledge of its harms, are all essential criteria in decisions relating to the diagnoses of AD. However, diagnosis is narrowed to include a maladaptive pattern of alcohol use, leading to clinically significant

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impairment, as manifested by three (or more) of the above characteristics within a twelve month period (APA, 2000).

To date the number of studies examining the validity of AD as a diagnostic construct has been greater within the framework of the *DSM-IV*, than that of research conducted with the *ICD-10* system of classification. The *ICD-10* contains six main criteria for the diagnosis of AD, as compared to the seven criteria advanced in the *DSM-IV*. Nevertheless, in a comparative study of the two classification systems for Substance Dependence, Saunders (2006) concluded that both represent psychometrically robust measures, and that the differences are slight enough to not warrant major distinctions. The lone difference is the *ICD-10* includes a cognitive item of craving as a category whereas the *DSM-IV* does not (Saunders, 2006). For the intent of the present study, therefore, *DSM-IV* diagnostic criteria was used as a point of reference in determining accuracy measures of internet information concerning AD (See Appendix B).

Risk Factors. A review of the entire catalogue of information pertaining to the risk factors associated with the development of alcoholism is outside the scope of the current study. Interested readers are referred to Cornish (2007) for a biopsychosocial review of the literature. Nevertheless, a thorough review of the available literature has revealed a consistent range of bio-psycho-social aspects relevant to the topic. Polcin, (1997) suggests the substantial quantity of evidence in support of varying approaches to etiology has led to a general consensus that alcohol problems are multi-determined. Thus, it should be noted that the presence of one or more of the variables presiding within an individual does not necessarily lead to the development of AD. As with the determination

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of any behaviour, a multitude of variables must combine fittingly for said behaviours to occur. For example, the supported hypothesis of a genetic link to alcoholism is not sufficient in itself to predict future alcohol problems as there are many environmental and interpersonal factors to consider. As Tooby and Cosmides (2005, p. 34) state, “every single component of an organism is codetermined by the interaction of genes with environments.” Thus the etiology of AD can be considered multidimensional and highly complex.

Biological Factors. The literature consistently identifies four biological components to AD: genetic factors, biochemical research, sex, and age. Specifically, research indicates through twin and adoption studies that heritable factors play a 50-60% role in the development of AD (e.g., Cadoret, Yates, Troughton, Woodworth, & Stewart, 1995; Heath, 1995; Oroszi & Goldman, 2004; Quickfall & el-Guebaly, 2006). Biological vulnerability to AD has also been demonstrated via biochemical research revealing brain responses to alcohol involves changes in neurotransmission that play a role in maintaining drinking behaviour (Schuckit & Smith, 2000; Schuckit, Smith, & Kalmijn, 2004). The prevalence rates of AD between genders are higher for males than females, with a male-to-female ratio as high as 5:1 (APA, 2000). Research suggests that earlier the age of experimentation with alcohol, the greater the likelihood of developing later alcohol problems (Bonomo, Bowes, Coffey, Carlin, & Patton, 2004; Marsh & Dale, 2005). Conversely, research also finds age-related physiological changes in elderly people can result in increased susceptibility to the intoxicating effects of alcohol, and subsequent problems (APA, 2000).

Psychological Factors. Research into the psychological factors pertaining to AD have consistently revealed there to be four main components: cognitive, emotional, comorbidity and personality elements. Cognitive processes are critically implicated in the development of AD. Indeed, people's attitudes and beliefs are important (e.g., believing alcohol has many positive effects) in determining whether one will go on to develop AD (e.g., Dodes, 2002; Kirisci et al., 2004; Smith, Goldman, Greenbaum, & Christiansen, 1995). Drinking to cope (e.g., emotionally) may predispose one to a future diagnosis of AD. Excessive consumption of alcohol may be used as a method to relieve seemingly uncontrollable, unpleasant feelings of depression, anxiety and stress (e.g., Bates, 1993; Buckstein, 1995; Dodes, 2002; Kaminer, 1994). AD has also been associated with numerous other diagnoses including depression, anxiety, schizophrenia, and antisocial personality disorders (APA, 2000; Kushner, Abrams, & Borchardt, 2000; Lynskey, 1998; Marsh & Dale, 2005; Petrakis et al., 2002; Sher, Walitzer, Wood, & Brent, 1991). Finally, the majority of investigations have failed to identify a hypothetical 'alcoholic personality'. Thus, there is widespread agreement refuting the existence of an 'alcoholic personality' (Bates, 1993; Polcin, 1997).

Sociological Factors. Sociological factors of AD evident in the scientific literature continually point to five main components. These sociological factors include cultural factors, family and developmental factors, peer factors, gender and socioeconomic status. The APA (2000, p. 219) states, "The cultural traditions surrounding the use of alcohol in family, religious, and social settings, especially during

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childhood, can affect both alcohol use patterns and the likelihood that alcohol problems will develop.” Cultural factors include availability of alcohol and social acceptance of the use of alcohol. Insecure attachment styles, severe family disturbance and dysfunction are implicated in the development of AD (e.g., Bellis, 2002; Caspers, Cadoret, Langbehn, Yucuis, & Troutman, 2004; Goodwin, Fergusson, & Horwood, 2004; Molnar, Buka, & Kessler, 2001). Peer associations also play an important role in the development of future AD, as peer networks provide influential sources of support and reward (e.g., Beman, 1995; Goodwin et al., 2004). Finally, it has been suggested that higher levels of AD are associated with lower socioeconomic status, unemployment, and lower educational levels (Helzer, 1987).

Additional AD related items of interest. Whether treatment was mentioned or not was recorded in a dichotomous manner in the present research, as was whether prognosis was mentioned. A complete review of these items, however, is beyond the scope of the present study.

Health information on the internet

Information dissemination regarding health related issues traditionally has been the domain of practicing health professionals. However, health information has now become readily available to anyone with access to the internet. Concomitantly, the internet has become an important medium among adolescents, and young adults (Borzekowski & Rickert, 2000; Gray et al., 2005). Gray et al. (2005) suggest that in

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excess of 90% of teens to young adults (15-24 year-olds) have accessed the internet for information in general, and that 75% of this robust sample had used it to find health information.

Health topics listed as gaining the most interest included sexual health and drug/alcohol related issues (Gray et al., 2005). Adolescents being renowned for having difficulties in accessing established health services, particularly mental health services, for various reasons may fail to benefit from traditional health information sources (Gray et al., 2005; Jacobson, Richardson, Parry-Langdon, & Donovan, 2001). However, health information gained from the internet, offering privacy and confidentiality, has alleviated such difficulties (Borzekowski, & Rickert, 2001; Gray et al., 2005). Considering these points, and that adolescents and young adults are the most active groups of internet users (Borzekowski & Rickert, 2000; Gray et al., 2005), it seems likely that internet information pertaining to health topics will be actively sought by adolescents. Furthermore, since information gained from online sources has the potential to influence the decisions, and subsequent behaviours, consumers make regarding their own health care (Boyer, Shannon, & Hibberd, 2005; Falck, Carlson, Wang, & Siegal, 2004; Pelling, 2006), and the reality that internet use is so widespread in general (Cline & Haynes, 2001; Fallis & Fricke, 2002; Morahan-Martin, 2004), it is essential information be accurate.

Knowledge regarding the nature and accuracy of AD information accessible on the internet has hitherto been nonexistent. The bulk of studies investigating the accuracy of health information have focused largely on broad health issues (e.g., Benigeri & Pluye, 2003; Cline & Haynes, 2001; Eachus, 1999; Morahan-Martin, 2004), or entail searching

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specific health topics (e.g., Bichakjian et al., 2002; Lissman & Boehnlein, 2001; Matthews et al., 2003; Pelling, 2006; Prasad & Owens, 2001). These previous efforts examining health related information on the internet have failed to demonstrate significant positive outcomes. That is, the comprehensive agreement among researchers is that the overall standard of health information available online is low. Lissman and Boehnlein (2001) suggest that 'For-profit' web sites appeared more frequently in the top sites, and also contained inferior information than the 'Not-for-profit' sites produced by web search engines. Many websites with health information can contain wrong, misleading and even dangerous information (Crocco, Villasis-Keever, & Jadad, 2002).

According to Eysenbach et al. (2002, p. 2695), "Accuracy can be defined as the degree of concordance of the information provided with the best evidence or with generally accepted medical practice." Hence, the various studies addressing accuracy of health information on the internet all begin by defining the relevant terms associated with the specific concern under investigation. For instance, Lissman and Boehnlein (2001) testing information about depression used *DSM-IV* criteria in determining measures of accuracy.

To the extent that methodological issues are concerned, each of the reported studies (e.g., Bichakjian et al., 2002; Lissman & Boehnlein, 2001; Matthews et al., 2003; Pelling, 2006; Prasad & Owens, 2001) have employed somewhat robust designs capable of generating sufficient power to detect variances (Cohen, 1992). The majority examined at least the first twenty web sites according to the search terms used. The findings of previous research indicates that those searching the internet tend to not venture far from the initial and original site provided and the first few websites accessed by the various

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search engines (Morahan-Martin, 2004) would suggest that the number of websites examined were ample. Indeed, Hansen, Derry, Resnick, and Richardson (2003) discovered that when accessing health information, people find the sheer volume of possible web sites retrieved by most search engines to be overwhelming and caused difficulty, leading people to search only the first few results. Additionally, this caused difficulties in finding relevant information, with another study concluding that information for a specific enquiry produced unsatisfactory information (Zeng et al., 2004).

An apparent shortcoming in the bulk of past research on health information on the internet is the absence of any investigation into the accessibility, or readability, of health information online. Research examining the readability of health information has continually demonstrated it to be beyond the reach of those whom use, and indeed need, it the most (e.g., Adkins et al., 2003; D'Alessandro et al., 2001; Freda, 2005; King et al., 2003). For example, D'Alessandro et al. (2001) found the reading level required for pediatric information available online to far surpass that of the national average reading level for persons in the USA (Doak et al., 1996). These findings have been corroborated by recent research (Freda, 2005; King et al., 2003) suggesting that health information available to the general public may not only be inaccurate, but may also be inaccessible.

A further limitation regarding past research assessing health information on the internet is the lack of exploration into the actual design of the websites, or their visually appealing nature. Given that individuals with AD often react to alcohol related cues presented via images, underscores the importance of this design investigation (e.g., Coffey et al., 2002; Coffey et al., 1999; Glautier & Drummond, 1994; Rosenow et al.,

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1994; Smith-Hoerter, Stasiewicz & Bradizza, 2004). Given the visual nature of the internet, it was surprising that few articles reviewing websites actually assessed the visually engaging nature of the websites examined. Indeed, according to Eysenbach et al, (2002) of those using some measure of design quality very few actually reported said results. Pelling (2006) reported a simple design measure based on pictures versus text and found that websites relating to tobacco were more likely to contain pictures if they were commercial versus non-profit or government originating sites. Similarly, Lissman and Boehnlein (2001) also found that commercial sites were more likely than non-profit sites to contain banners (such as pictorial product advertisements). In addition to finding the websites to be more visually engaging tend to be commercial in nature, these two studies (i.e., Lissman & Boehnlein, 2001; Pelling, 2006) found the commercial websites to be less accurate with the scientific literature regarding the specific concern. However, a previous study by Fallis & Frické (2002) indicates that the source, defined by the credentials of the author of the internet material, did not relate to the accuracy of information provided. Similarly, Kunst et al. (2002) indicated only a slight relationship between the source and the accuracy of information provided as well.

Hypotheses

Given the findings of previous research, the current study proposes three main hypotheses. First, it was hypothesised that the current study would find little congruence between active internet material and the scientific literature regarding AD. Second, it was expected the current study would find reading levels too high regarding the accessed

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internet resources on AD, compared to average reading levels of the USA and Australia.

Thirdly, it was expected the current study would find commercial sites to be less accurate and contain more images than non-commercial sites.

In addition, due to the lack of research examining a number of internet related aspects (search engine utilized, hyperlink activity and recency of page-updates) and the number of references cited on websites, as they relate to accuracy and accessibility, were also examined.

Method

Overview

The current study examined a set of websites in order to determine the nature and accuracy of AD information on the internet. This examination occurred in two stages. First, a set of websites was obtained which was then, second, examined for accuracy, accessibility and design. The specific procedures used to select and collect websites, as well as analyses are as follows.

Search Engine Selection & Website Collection

Search Engine Selection. In order to determine the most representative search engines to use for the gathering of specific websites in the present study an examination of search engine popularity relating to internet research was conducted in a twofold

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fashion. First, a review of past research investigating websites was conducted in order to determine which search engines have been used in research. Second, research investigating the popularity of various search engines was examined.

The review of past research identified five main publications investigating websites. Specifically, assessing individual health topics on the internet. The search engines used in these research projects included, presented in alphabetical order, Altavista, Excite, Google, Infoseek, Lycos, Microsoft Network (MSN), Netscape, and Yahoo (Bichakjian et al., 2002; Lissman & Boehnlein, 2001; Matthews et al., 2003; Pelling, 2006; Prasad & Owens, 2001).

The popularity of various search engines has been assessed by few. However, there are two notable exceptions. First, the Nielsen NetRatings reported by Nielsen web reference (Bausch, 2007), and second, the rankings available from comScore Media Metrix (Burns, 2007; Lipsman, 2007). According to both of these sources the most popular search engine is Google followed by Yahoo and MSN. It is noted that the three most popular search engines as indicated by Bausch (2007) and Lipsman (2007) were also used in past published research on the nature of internet health information. As a result, the current study will also utilize the three most popular search engines: Google, Yahoo, and MSN.

Website Collection. A standard power analysis formula was used to determine the minimum number of web cases required to enable satisfactory statistical analyses to be performed (Cohen, 1992). A total of 14 variables, as follows, were assessed for each website obtained. Thus, the first 70 websites were obtained from each search engine for a

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generous total of websites, 210. The original web address produced by the searches performed were the only sites examined due to the fact that previous research indicates that those searching the internet tend to not venture far from the original site provided and the first few websites accessed by the various search engines (Morahan-Martin, 2004).

Data collection occurred during a one week period. Specifically, between June 1 and June 4, 2007, a number of relevant terms were used to search the internet using the designated search engines. This allowed for two days of web searching, saving, and the printing of websites for each search engine utilized.

The search terms used in the current study included those that would be used by a lay person searching the topic area of interest. In particular, AD and Alcoholism. Thus, using Boolean logic (Barker, 2002) the following search terms were used: “Alcohol Dependence” or “Alcoholism” in order to simulate the two likely searches of the internet made by those interested in the disorder.

Website Assessment

A total of 14 variables were evaluated in the current study. These included the search engine used to gather the sites examined (Google, Yahoo, and MSN); the readability of the websites collected, the design aspects of the sites, the source of the websites, recency of the sites, presence of hyperlinks and activity, accuracy of the information contained on the sites, and the bibliographic references presented on said

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sites. Each of these variables is described in more detail as follows save the search engines used which has been previously presented.

The website characteristics and accuracy of the obtained websites was measured by two assessors educated in the basic diagnostic, biological, psychological and social aspects of AD, with access to a registered psychologist with clinical and counselling training to answer any relevant questions. The two educated assessors examined each website in order to allow inter-rater reliability to be calculated. Data obtained from correlations of variables concerning accuracy produced excellent inter-rater reliabilities of 0.935, 0.889, 0.814, and 0.871 for diagnosis, biological, psychological, and sociological aspects respectively.

Accessibility. A number of formulas can be used to assess reading level, or accessibility. In an examination of two popular methods for assessing reading level, accessibility, Freda (2005) indicated that the Flesch-Kincaid method used by Microsoft Word produced the more accurate assessment of readability. As a result of this examination and the ease of access to the Flesch-Kincaid formula via Microsoft Word it was decided that the reading level presented on the websites assessed would be examined using the Flesch-Kincaid formula. Higher required reading levels equates to lower accessibility.

Design: Pictures/Text Ratio. The internet is a multimedia enhanced environment in which text is paired with graphics and other multimedia aids (Barak, 1999). The current study used a simple ratio measure for design. Specifically, the number of pictures

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against the number of pages located on particular websites. Pictures being defined as all images on a website including cartoons, images, pictorial advertisements and logos. Such an inclusive definition of pictures and a simple ratio definition of design were chosen for simplicity of interpretation and analysis.

Source: government, non-profit, university, company, individual. There are a number of possible website sources. Many of these relate to specific domain names. For instance, there are dot com, dot net, dot org, dot asn, dot id, dot biz, dot info and dot co domains available on the Internet and it is likely that additional domain suffixes will be created in the near future (AUSWEB, 2007; Melbourne IT, 2007; Webcity, 2007). Each suffix represents the origin of the website, for instance dot org means a traditionally non-profit organization and dot edu refers to an educational institution. A listing of the main website suffixes can be found in Table 1. Additionally, websites can originate from various countries as well. Websites examined in this study had the source of sites but not the country origin recorded for analysis.

Table 1.

Common website suffixes and their meanings.

Suffix	Meaning
.com	Commercial company
.edu	Educational institution
.gov	Government
.net	Network

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.org	Non-profit
.mil	USA military

Recency. Information on the internet is continually being updated. Nevertheless, older web information can still be accessed. Some websites display a last updated badge indicating when the site was last modified. This last modification date can be used as a basic measure of the recency of the information provided. Morahan-Martin (2004) and Barak (1999) note that few studies have reported the recency of websites examined in studies despite the importance of such a measure for the validity, currency, of information provided. This lack of attention to the recency of information may be due to the fact that some have indicated such recency data do not correlate or only slightly correlate with accuracy (Fallis & Frické, 2002; Kunst et al., 2002). The recency of the websites accessed was recorded in the present study, when available as health related information is generally considered outdated in 3 to 5 years (Health Compass, n.d.; John Hopkins Bayview Medical Centre, 2006).

Hyperlink/Activity. The presence of hyperlinks and their activity was recorded as this may offer an extra dimension for exploration unique to the internet environment.

Accuracy. As stated previously, accuracy was to be rated via its concordance with the best scholarly evidence available. For the purposes of the current study accuracy has been limited to include diagnostic criteria, and a summary of the best available evidence

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regarding the biological, psychological and social aspects of AD. Definitional criteria were included in the first instance as this is a common measure of accuracy in previous studies conducted by Fallis and Frické (2002), Bichakjian et al. (2002) and Lissman and Boehnlein (2001). Additional information on the biological, psychological, and social aspects of AD has been collected from a number of pertinent and recent sources via a comprehensive literature review, aspects of which have been previously outlined. Accuracy did not include, in the present study, information regarding treatment and prognosis. However, whether such information was provided in a categorical manner was recorded.

The accuracy of each website obtained was assessed by use of a standard form recording each of the 14 variables explored (See Appendix B). The variables assessed were of a categorical (source of website, search engine used, inclusion of treatment and prognosis information), ordinal (readability) and continuous nature (design, recency, and bibliographic references). The majority of the accuracy variables were rated on ratio scales reflecting the number of common generally accepted information categories relating to AD. For instance, the generally accepted diagnostic criteria for AD contain ten components. Thus, the accuracy of the diagnostic criteria for AD was rated out of 10+1, with higher numbers indicating a greater degree of accuracy thus indicating that a certain number of diagnostic components were included on the website examined, with zero indicating no topical information found. Similarly, the common elements the difficulty examined relating to biological, psychological, and social aspects were rated on 4 (Genetic Disposition; Biochemical Factors; Gender; Age), 4 (Emotional Factors; Cognitive Factors; Comorbidity; Personality), and 5 (Cultural Factors;

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Family/Developmental factors; Peer Factors; Gender; SES) numbered ratio scales respectively, with higher numbers reflecting greater numerical inclusion of the generally accepted biological, psychological, and social aspects of the difficulty on the website examined, with zero indicating none of the literature identified factors being mentioned. These biological, psychological, and social aspects have been previously reviewed in the introductory section of the present study. A copy of the form used to record the 12 variables explored can be found at the end of the study (Appendix B).

References provided – bibliographic format. When examining the quality and accuracy of a journal article one examines the references upon which the research has been based. This allows a certain measure of credibility to be established. Consequently, the veracity of the internet information found using the search terms chosen was assessed not only by educated assessors but also the number of references provided in a bibliographic format listed on each website assessed.

Results

Descriptive Data

Website Assessment. When using the search terms “Alcohol Dependence” and “Alcoholism” with each of the search engines (Google, Yahoo and MSN), a total of 674,000; 484,000 and 67,338 hits were produced, respectively. As with all internet search

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strategies, invariably there are some inactive sites. Out of the 210 websites examined, 5 were inactive, 172 unique with 38 duplicates. Inactive sites constitute missing data.

A total of 14 variables were evaluated in the current study. These included the search engine used to gather the sites examined (Google, Yahoo, and MSN); the readability of the websites collected; the design aspects of the sites; the source of the websites; recency of the sites; accuracy of the information contained on the sites; hyperlinks present and activity, and the bibliographic references presented on said sites. Additionally, two composite variables were created. These were Total Accuracy, as defined by diagnosis and biopsychosocial factors, and Source Derivative, as delineated by profit versus non-profit websites. Commercial, or profit, websites included dot com websites, whereas non-profit websites included dot edu, dot gov, dot net and dot org. Table 2 presents the descriptive results of each of the assessed variables.

Table 2.

Descriptive results for the study variables.

Variable	<i>N</i>	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>	<i>Median</i>	<i>Mode</i>
Readability	199	11.43	1.16	5.30	12.00	12.00	12
# Pages	205	4.62	5.22	1.00	48.00	3.00	3
# Images	205	5.12	5.36	5.12	33.00	3.00	2
Source	210	-	-	-	-	-	1
Recency	81	2005.12	2.38	1999	2007	2006	2007
Diagnosis	205	3.06	2.84	0.00	10.00	4.00	0

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Biological	205	1.11	1.12	0.00	4.00	1.00	0
Psychological	205	0.65	0.88	0.00	3.00	0.00	0
Sociological	205	1.25	1.28	0.00	4.00	1.00	0
Total Accuracy	205	6.07	5.06	0.00	20.00	6.00	0
Treatment	205	-	-	-	-	-	1
Prognosis	205	-	-	-	-	-	0
References	205	4.06	11.76	0.00	96.00	0.00	0

The 205 websites examined ranged from one page to forty eight pages with an average of four and a half pages of information ($M = 4.62$, $SD = 5.22$). As can be seen from Table 2, the descriptive results for the variables of interest revealed some noticeable qualities. Beginning with Total Accuracy, the mean result ($M = 6.07$, $SD = 5.06$), out of a possible 23, coupled with a zero result for 21.4% of cases indicates AD internet information lacks diagnostic and biopsychosocial information. This is further highlighted with the variables Diagnosis, Biological, Psychological and Sociological, which show frequencies of zero scores being 35.7%, 39.5%, 56.2%, and 39%, respectively. Indicating that at least a third of the sites obtained scoring zero for, including diagnostic and biopsychosocial, information on AD.

The mean score for Readability ($M = 11.43$, $SD = 1.16$) suggests that internet information concerning AD may be inaccessible by the average Australian reader. The most common result across the websites for Readability was the highest possible score

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(*Mode* = 12), with a frequency of 60%, and 85% of scores above the average reading level for Australia.

The majority of websites did not include recency figures (59%) or references (67.6%). Among the websites collected the representation of commercial (51.4%) and non-commercial (48.6%) sites were found. There was a high frequency of websites that made reference to treatment (73.3%), and a high portion had hyperlinks (94.8%) that were active (94.3%).

Data Preparation and Screening

Prior to analysis, all data were examined using SPSS for accuracy of entry, missing values, and where appropriate, univariate outliers, normality and linearity. There were five cases with missing values (the inactive websites), whereby these were excluded casewise for the analyses. Appropriate variables were examined to ensure that assumptions of multivariate analyses were satisfied (Tabachnick & Fidell, 2001). The distributions of these appropriate variables were examined visually using frequency histograms and empirically using skewness and kurtosis ratios. This examination revealed that the distribution for the majority of variables to be non-normal. Examination of the distribution for each of the accuracy variables (Diagnosis, Biological, Psychological, Sociological and Total Accuracy) revealed moderate positive skew and kurtosis. However, the skewness and kurtosis statistics for the variable of interest, Total Accuracy, fell within acceptable parameters (2.23 and -2.62 respectively), as did Diagnosis. For the remaining variables that did not demonstrate normality (i.e.,

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Readability, Number of Pages, Number of Images, Recency, References, and Biological, Psychological and Sociological variables), transformations designed to increase the normality of distribution were investigated. As a result, square root, logarithmic and inverse transformations were attempted on the data. However, no transformations generated a more normal distribution. Consequently, variable scores remained untransformed for data analysis (Appendix C). This lack of normality for some variables likely lowered the power of analyses to find significant variable impact.

Inferential Analysis

An independent samples t-test was conducted to test the hypothesis that commercial websites would contain less accurate information than non-commercial websites. It was found that no significant differences were evident between commercial ($M = 6.40$, $SD = 5.33$) and non-commercial ($M = 5.71$, $SD = 4.76$) websites, $t(203) = -0.987$, $p = .325$ (2-tailed).

An independent samples t-test was conducted to test the hypothesis that commercial websites would contain more images than non-commercial websites. It was found that no significant differences were evident between commercial ($M = 5.51$, $SD = 5.69$) and non-commercial ($M = 4.71$, $SD = 4.99$) websites, $t(203) = -1.07$, $p = .286$ (2-tailed).

Bivariate correlations were conducted using non-parametric (Spearman Rank Order) correlations for all categorical and non-normal continuous variables (see Table 3). The accuracy variables Biological, Psychological and Sociological had significant

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positive bivariate correlations with Number of Pages, and, intuitively, whether or not treatment and prognosis was mentioned. Number of Pages also showed a significant positive correlation with References. Readability was positively correlated with References, but of note was that Readability was negatively correlated with Biological and Psychological variables. Also of interest is that Biological had a significant negative correlation with Hyperlink and Activity.

In addition to the descriptive and comparative analyses reported above, the current study also examined variables in an exploratory manner. A forward multiple regression analysis was conducted to determine the best subset of predictors of Total Accuracy. Based on the statistical criteria computed from the particular variables drawn (Tabachnick & Fidell, 2001), two variables were entered. The variables entered were: Number of Pages and Readability. Number of Pages was entered on the first step of the analysis, $R^2 = .103$, $F(1,78) = 8.968$, $p = .004$, and accounted for 10.3% of the variance. On step 2, Readability was entered, R^2 change = .057, adding a further 5.7% to the variance explained. Number of pages and Readability collectively explained 16% of the variance in Total Accuracy, $R^2 = .160$, $F(2,77) = 7.347$, $p = .001$.

For further exploratory purpose, oneway ANOVAs were conducted to determine whether any differences existed between the search engines used and the variables Readability, Page Design, Recency, References, and Total Accuracy. No significant differences were found between search engine used and all the above variables (see Table 4). Data missing is due to Levene's test for homogeneity of variances not being satisfied,

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and post hoc analyses could not be exercised due to the nature of the data (Tabachnick & Fidell, 2001).

Table 4.

ANOVA results for Search Engine and variables of interest.

Variable	<i>F</i>	Significance ($p < .05$)
Readability	.890	.950
# Pages	2.091	.126
# Images	-	-
Recency	.198	.821
References	-	-
Total Accuracy	1.09	.338

Discussion

Accuracy of Alcohol Dependence Information on the Internet

Accurate information concerning AD on the internet from a diagnostic and biopsychosocial perspective is low. As predicted, the results of this study showed that the mean level of Total Accuracy for the websites analysed to be low. This is further highlighted by the fact that zero scores for each of the accuracy variables was a common feature of the data, indicating that many websites failed to mention any of the principal features of AD according to the scientific literature. These results add support to existing scholarship on the accuracy of health information presented on the internet. In particular,

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these results are consistent with previous research findings (e.g., Benigeri & Pluye, 2003; Bichakjian et al., 2002; Bower, 1996; Cline & Haynes, 2001; Craigie et al., 2002; Croft & Peterson, 2002; Eysenbach et al., 2002; Fallis & Frické, 2002; Impicciatore et al., 1997; Lissman & Boehnlein, 2001; Matthews et al., 2003; Morahan-Martin, 2004) showing the accuracy of health information on the internet to be lacking.

Accessibility of Alcohol Dependence Information on the Internet

The results have revealed, as hypothesised, that the reading level required to access AD information on the internet is excessive, when compared is made with the average reading levels of both the USA and Australia. These results are consistent with previous research findings (e.g., Adkins et al., 2003; D'Alessandro et al., 2001; Freda, 2005; King et al., 2003) showing health information in general tends to be inaccessible to those who would use it.

Commercial versus Non-commercial Websites

No significant differences in Total Accuracy were found between commercial and non-commercial websites. Additionally, no significant differences were found between commercial and non-commercial websites with regards to design, or the number of images present on the websites. These results fail to corroborate previous findings (e.g., Lissman & Boehnlein, 2001; Pelling, 2006) that commercial websites contain inferior information to non-commercial sites, yet display greater design aspects.

Limitations

Although the results of the current study indicate the quality of AD information on the internet to be lacking, in addition to demonstrating low accessibility, caution must be taken when drawing conclusions. The following limitations of the present study must be considered. First, generating any definitive conclusions is difficult due to the nature of data analysed. That is, it is possible that the variables in reality are not normally distributed and generally that the non-normality of the data lowered the statistical power of the analyses used.

Second, the average reading levels with which the data was compared may not be the same as those who access the internet. Explicitly, individuals who access the internet may possess higher reading levels than the national averages of the USA and Australia.

Third, although excellent inter-rater agreement was found for website assessment, the analysis was conducted in such a way that the key criteria for each of the accuracy dimensions were recorded as either present or not. This obviously does not address the actual content contained in the websites. A content analysis of AD information would address this problem.

Fourth, the results are only representative of websites collected during the specified period. That is, the research is a point-in-time study. As websites may continually appear and disappear from the internet as rapidly as technology advances, it is highly probable that repetition of this study, with these particular websites, is not possible. Additionally, some of the websites are not designed to provide information but rather exist as personal accounts, thereby reducing the accuracy outcomes of the present study, given the way accuracy was defined.

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Implications

Despite the limitations of this research, the study has further demonstrated that health information posted on the internet is lacking in accuracy. The paucity of accurate websites represented in this search may stem from a number of factors. To be listed and highly ranked by a search engine, the owner of the website must continually meet complex demands to maintain the position on the search engine. These demands may not facilitate a scholarly review of AD. This may result in many individuals receiving incorrect or even harmful material from the internet.

Of major concern is the number of websites displaying images of alcoholic beverages and their consumption, which has the capacity to ‘trigger’ craving reactions (e.g., Coffey et al., 2002; Coffey et al., 1999; Glautier & Drummond, 1994; Rosenow et al., 1994; Smith-Hoerter, Stasiewicz & Bradizza, 2004) in those who may be searching for AD information on the internet. Future research should investigate the nature of AD images on the web.

With the internet becoming increasingly employed in the delivery of psychological applications (e.g., Barak, 1999), and accessed by individuals searching for health related information (e.g., Borzekowski & Rickert, 2000; Gray et al., 2005), an urgent call is made to health and addiction practitioners who have developed websites for educational purposes to examine their ranking on major search engines. As it is impracticable to suggest strict regulations on information posted on the internet, the possibility of mistaken and harmful information is a reality. Hence, with the outcomes of

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the current research, the author appeals to the Australian Psychological Society, American Psychological Association, and governments to become increasingly involved in the dissemination and maintenance of recent and accurate health related bibliotherapy. In addition, it is suggested that governments and psychological agencies advertise specific websites relating to AD information via other media sources, as has been witnessed with beyondblue.com.au for depression. This may potentially encourage those dealing with alcohol related issues to seek out such sites for information rather than trawling through the seemingly random contents of search engines.

As research in the area of psychological applications on the internet has only just begun future research possibilities are abundant. The need to determine the accuracy and quality of an entire range of psychological themes on the internet is evident. With regards to AD information on the internet, future research might investigate the actual content of websites through qualitative analysis procedures, including treatment, and to examine thoroughly the nature of design and some other unique features of the internet.

Conclusion

In conclusion, the findings of the current study indicate that AD information presented on the internet is lacking in accuracy and is inaccessible to the general population. Although no differences were established between source and design of the information, this may be partially attributed to the nature of the data. These findings have further confirmed the existing body of literature examining internet information. Hence,

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consumers and health practitioners alike are warned against using internet information resources as bibliotherapy.

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Appendices

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Appendix A

Cornish, M. (2009). The Nature and Accuracy of Alcohol Dependence Information on the Internet. *Counselling, Psychotherapy, and Health*, 5(1), The Use of Technology in Mental Health Special Issue, 249-299.

Appendix A

Formula used for developing the Australian national average reading level

As there was no available data, at the time the study was conducted, expressing the average reading grade level for Australia in terms of the Flesch-Kincaid Formula, an estimate was developed. An analysis was conducted whereby, initially it was established which Australian newspapers have the greatest reading audience (based on a number of sources: e.g., <http://www.thepaperboy.com/australia/>, http://www.newspapers.com.au/most_popular.html, and <http://www.4imn.com.au/>). Next, these newspapers were assessed using the Flesch-Kincaid readability scale. Finally, once all the readabilities had been ascertained an average was taken, thereby enabling the current researcher to produce an average reading grade level, according to the Flesch-Kincaid Formula, for the Australian populace.

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Appendix B

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Appendix B

The Nature and Accuracy of Alcohol Dependence/Alcoholism Information on the Internet

Standard forms used for recording variable data and diagnostic criteria.

Case	Search Engine			Readability	Design		Source	Recency	References/ Biblio	Hyperlink	
	G (1)	Y (2)	M (3)	Grade level (0-12)	# Pgs	# Imgs	# Pgs	# Imgs	.com .edu .org etcetera	Pres ent	Acti vity
1											
2											
3											
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Accuracy						
Case	Diagnosis: (Alcohol Dependence = 10 diagnostic criteria/Like rt scale = 11)	Biological Aspects 4 (Genetic Disposition; Biochemical factors; Gender; Age)	Psychological Aspects 4 (Emotional Factors; Cognitive Factors; Comorbidity; Personality)	Sociological Aspects 5 (Cultural Factors; Family/Develop mental factors; Peer Factors; Gender; SES)	Treatment Mentioned (1=Yes/0=No)	Prognosis Mentioned (1=Yes/0=No)
1						

210						

Diagnosis Criteria (Adapted from the *Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR)*, APA, 2000)

1. Tolerance – need for markedly increased amounts of alcohol to achieve intoxication or the desired effect.
2. Tolerance – markedly diminished effect with same amount of alcohol.
3. Withdrawal – characteristic withdrawal syndrome of maladaptive behavioural changes, with physiological and cognitive concomitants, that occurs when blood or tissue concentration of substance decline post prolonged heavy use of substance.
4. Withdrawal – characteristic withdrawal syndrome typically using alcohol throughout the day beginning soon after waking.
5. Withdrawal – alcohol taken to relieve or avoid withdrawal symptoms.
6. Alcohol taken in larger amounts or over a longer period than was intended.
7. Persistent desire or unsuccessful efforts to cut down or control alcohol use.
8. A great deal of time is spent in activities necessary to obtain alcohol, or recover from its effects.
9. Important social, occupational, or recreational activities are given up or reduced because of alcohol use.
10. Alcohol is continued despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by alcohol use (e.g., alcohol-induced depression or continued drinking despite recognition that an ulcer was made worse by alcohol consumption).

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Appendix C

Appendix C

Table 1.

Tests for normality and transformation outcomes of the study variables.

Variable	Skew	Std. error of skew	Kurtosis	Std. error of kurtosis	Normal Y/N	Trans1 Y/N	Trans2 Y/N	Trans3 Y/N
Readability	-2.764	0.172	8.468	0.343	N	N	N	N
# Pages	4.961	0.170	32.739	0.338	N	N	N	N
# Images	2.367	0.170	7.339	0.338	N	N	N	N
References	4.618	0.170	26.160	0.338	N	N	N	N
Diagnosis	0.344	0.170	-1.053	0.338	Y	-	-	-
Biological	0.570	0.170	-0.913	0.338	N	N	N	N
Psychological	1.147	0.170	0.292	0.338	N	N	N	N
Sociological	0.609	0.170	-0.872	0.338	N	N	N	N
Total Accuracy	0.380	0.170	-0.887	0.338	Y	-	-	-

Table 2.

Transformations conducted on the study variables.

Variable	Transformation 1	Transformation 2	Transformation 3
Readability	SQRT (K-X)	LG10 (K-X)	1/(K-X)
# Pages	SQRT (X)	LG10 (X)	1/(X+C)
# Images	SQRT (X)	LG10 (X)	1/(X+C)
References	SQRT (X)	LG10 (X)	1/(X+C)
Diagnosis	-	-	-
Biological	SQRT (X)	LG10 (X)	1/(X+C)
Psychological	SQRT (X)	LG10 (X)	1/(X+C)
Sociological	SQRT (X)	LG10 (X)	1/(X+C)
Total Accuracy	-	-	-

X = variable name

C = a constant that is added to each score so that the smallest score is 1 (rather than zero or negative scores)

K = constant from which each score is subtracted so that the smallest score is 1 (i.e., the largest score +1)

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First Do No Harm: Valuing and Respecting the 'Person' in Psychological Research Online

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Abstract

The advent of the Internet has heralded broad changes in organisational and personal communication, commerce and information sharing. These technological advances have resulted in a shift in the methodologies and environments in which psychological research is undertaken. Transcending geographical barriers, the Internet offers a quick, convenient and inexpensive method of data collection from a large population of widely dispersed participants within a non-normative population. The Internet can be utilised effectively to eliminate or reduce the power differential between the researcher and the participant, providing a forum in which to communicate in a transparent and reflective dialogue. The portable functionality and accessibility of the laptop computer, combined with advances in wireless technology provide the researcher with remarkable flexibility and mobility. Research can be conducted anywhere and at any time. At face value, the Internet and its many applications (e.g. email, Internet Relay Chat, social networking websites, multi-user environments, newsgroups, bulletin boards, electronic mailing lists, instant messaging, web pages) could be perceived as the panacea and substitute for the heavily sampled population of undergraduate psychology students, yet as an instrument of research methodology, it is not without its weaknesses and challenges. As such, it is imperative that researchers consider the ethical, moral, technical and legal implications to adequately protect participants, whilst promoting innovative and methodologically sound research. This chapter examines the issues and considerations involved in undertaking a psychological study online. The difficulties associated with obtaining informed consent, privacy and confidentiality, deceptive techniques, debriefing,

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beneficence and the personal investment attributed to pseudonyms are addressed. Current ethical guidelines for conducting research via the Internet are reviewed and recommendations for best practice are presented.

Introduction

The Internet wields the potential to reshape the face of psychological research, transforming the means by which research is conducted; data collected, collated and analysed; and research published (Kraut et al., 2004; Nosek, Banaji, & Greenwald, 2002; Wishart & Kostanski, 2004). With a forecasted 2 billion global users online by the year 2011 (Computer Industry Almanac, 2006), the Internet is a crucible for the human experience, offering an electronic forum to voice our feelings, desires, interests and opinions (Eysenbach & Till, 2001). As such, the inimitable breadth of applications online (i.e. e-mail, Internet Relay Chat (IRC), multi-user environments, newsgroups, social networking websites, bulletin boards, electronic mailing lists, instant messaging (IM), web pages) offers researchers a rich latent source of social, behavioural and archival data (Kraut et al., 2004; Mann & Stewart, 2000; Robinson, 2001). The social interaction idiosyncratically inherent in these varied applications provides researchers with a unique opportunity to gain insight into a myriad of psychological constructs and phenomena in nonclinical settings (Wishart & Kostanski, 2004) and into the discourse and phenomena peculiar to this electronic medium (Kraut et al., 2004; Sharf, 1999).

The benefits that the Internet affords researchers must be counterbalanced with careful consideration of whether the researcher can conduct their study morally and

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ethically within this infrastructure (Porr & Ployhart, 2004). Whilst Kraut et al. (2004) contend that, fundamentally, online research is no more problematic nor of greater risk to participants than conventional research methods, this methodology is still in its infancy. Researchers must not only be conversant in their chosen field but also have a sound understanding of the Internet, its varied applications and the technology underpinning them (Frankel & Siang, 1999; NIMH, 2003). However, the dynamic nature of the Internet makes it increasingly difficult for researchers without an educational background in computer science to keep abreast of technological advances and comprehend the ethical issues that entail (Keller & Lee, 2003; Mann & Stewart, 2000; Sharf, 1999).

There has been considerable debate around the ethical implications of conducting research online, and this debate has traversed the schools of academia exploring Internet research scholarship (Clark, 2004; Krantz & Dalal, 2000). It has been widely agreed that traditional ethical guidelines and standards are challenged by the alterations in spatial, temporal, verbal and sensory aspects of human interaction online (Azar, 2000; Kralik, Warren, Price, Koch, & Pignone, 2005; Kraut et al., 2004; Suler, 2000). Whilst many of the issues remain unanswered, it is important that researchers seriously consider the ethical implications of their research online or they risk not only harming the participants in their study but the very phenomena under investigation (Berry, 2004; Hamilton, 1999). Many researchers have lobbied for universal ethical guidelines for online research, contending that at present, there are few boundaries to guide researchers in utilising the World Wide Web (DeLorme, Zinkhan, & French, 2001; King, 1996).

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The establishment of a universal set of ethical guidelines for any research undertaken online could see researchers abrogating the extant ethical codes that govern research practices. It would be more appropriate to follow what Ess and Jones (2004) referred to as “ethical dogmatism” and a strict adherence to the codes that guide traditional research methods. The institutional review boards (IRB) and professional principles that guide us in our practice in the real world must be applied to our pursuits into online research (Azar, 2000). For psychologists, these are the Australian Psychological Society’s (APS) Code of Ethics (2002) or the American Psychological Association’s (APA) Ethical Principles of Psychologists and Code of Conduct (2002). In fact, the APA Code of Conduct (2002) specifically states “if this Ethics Code establishes a higher standard of conduct than is required by law, psychologists must meet the higher ethical standard (p. 2).”

Informed Consent

Autonomy or respect for persons is one of the three fundamental tenets identified in the Belmont Report (1978) that forms the foundation of the current ethical and legal frameworks for the protection of participants in human subjects research. It ensures that individuals are treated with autonomy, dignity and respect (Flicker, Haans, & Skinner, 2004; Frankel & Siang, 1999). In practice, the principle of autonomy is ordained through the process of informed consent. This integral process involves providing prospective participants with clear, concise and accurate information about the research; empowering

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them with the necessary knowledge to make an informed decision as to whether or not they choose to participate in the study (Wishart & Kostanski, 2004).

Frankel and Siang (1999) delineated three key facets in the informed consent process:

1. Presenting information about the research to participants.
2. Ensuring comprehension.
3. Attaining and securing a voluntary commitment to participate.

They contend that in online research it is the latter two facets that are problematic.

Presenting Information about the Research to Participants

It is relatively easy to present plain language statements and consent forms in an online format. Both documents can be simply and effectively incorporated into the research web site and viewed online, or downloaded and printed by participants as hard copies (Frankel & Siang, 1999; Wishart & Kostanski, 2004). The challenge is in obtaining the handwritten signature from participants that legally signifies their consent to participate in the study (Frankel & Siang, 1999). Technologically, this hurdle could be overcome by the use of digital signatures to authenticate one's consent. However, the cost and accessibility of this software remains largely prohibitive to the average domestic Internet user (Porr & Ployhart, 2004; Stern, 2004).

Ensuring Comprehension

Advocates of Internet research argue that the presence of a legally binding signature does not automatically ensure comprehension, even in offline studies. The perceived power differential and the degree of trust between the participant and the researcher can result in participants consenting to participate in studies they do not truly understand (Kersting, 2004; Wishart & Kostanski, 2004). In this sense, the very nature of Internet research has the potential to diminish the effects associated with the inevitable reactivity in research with human participants. The physical absence of the researcher, anonymity and perceived level of privacy, combined with the higher degree of automation inherent in online studies significantly reduces experimenter bias, demand and social desirability characteristics (Bordens & Abbott, 1999; Siah, 2005). This has considerable positive implications for the reliability and validity of Internet studies.

Conversely, participants may be more distrustful of the legitimacy of online research, as they cannot plainly see the researcher or other participants (Siah, 2005). This could result in difficulties obtaining a statistically significant sample size and impact on the honesty and breadth of participants' responses.

In conventional research methodologies, the researcher is typically present to address and respond to any questions participants may have about the research, before signing the consent form (Varnhagen et al., 2005). Mann and Stewart (2000) contend that in Internet research, the effectiveness of the question period can be impeded by several key factors:

- a. Time constraints.
- b. The online synchronicity of both the researcher and the participant.

- c. The reluctance of the participant to engage with the researcher due to the perception of formality which may be attributed to textual dialogue.
- d. The inability of the researcher to gauge any non-verbal cues the participant may display, indicating that they do not truly comprehend the nature and the purpose of the study.

However, a study by Varnhagen et al. (2005) suggests that the effectiveness of this question period could also be queried in studies using more traditional methodologies. The study compared traditional pen and paper informed consent to online informed consent, and overall found no significant differences between traditional methods and online methods of informed consent. Indeed, in the experimental group that used traditional paper informed consent, not one participant asked the researcher a question prior to signing the consent form. In both groups (online and standard paper format), the participants read the documents quickly and subsequently recalled very little of the information in the consent form (Varnhagen et al., 2005).

Attaining and Securing a Voluntary Commitment to Participate

Logistically, it is no more difficult attaining and securing a voluntary commitment to participate in online studies than it is in their offline counterparts. Click to accept buttons, downloadable documents, online registration prior to commencement, e-mail and old fashioned snail mail can all be employed to facilitate the consent process (refer to Table 1). The key word in this facet of the informed consent process is the term *voluntary*. In fact, it could be argued that it is central to the entire principle of autonomy,

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and poses one of the fundamental concerns in the debate over the ethics of online research – *is it necessary to obtain informed consent in Internet studies?*

Hudson and Bruckman (2004) raised the following questions in relation to informed consent:

1. “Is it ethical to enter a chatroom and record the conversation for research purposes?”
2. Is it sufficient to announce the researcher’s presence and offer users a way to opt out of participation?
3. Is it feasible to announce the researcher’s presence but only record data if participants type a command to opt in?” (p. 128).

The answer is unequivocally no. International Review Boards (IRB) reviewing conventional research methods would not accept these means of obtaining informed consent; therefore they should not be acceptable in online research methodology. The principle of beneficence compels researchers to minimise any potential harms (i.e. emotional or psychological distress, social disadvantage, loss of privacy and public exposure). If the process of obtaining consent is likely to harm an online community in any way, the researcher should design a web site, electronic mailing list, IM or chat room specifically for the purposes of the research (Hudson & Bruckman, 2004).

Table 1

Informed Consent: Ethical Concerns and Recommendations

Ethical concerns	Recommendations
1. Recruiting participants	a). Obtain written permission from moderators of sites before posting advertisements for research studies on their web sites or electronic mailing lists (Michalak & Szabo, 1998).
2. Informing participants about the research study	a). A plain language statement should be visibly presented on the research web page. It should be written clearly using simple language.
3. Physically obtaining informed consent	a). Design a “click to accept” button (Kersting, 2004). b). Request digital signatures (Kraut et al., 2004; NIMH, 2003) c). Incorporate an informed consent statement in a portable document format (PDF) into the research web site that can be downloaded by participants, signed and returned to the researcher by post (Kraut et al., 2004; NIMH, 2003). d). Post an informed consent statement to participants with a pre-paid postage return envelope (NIMH, 2003). e). Create a password protected web site, requiring participants to register online prior to their participation (Nosek et al., 2002).
4. Ensuring comprehension of informed consent	a). Pre-test the plain language statement and informed consent statements (Kraut et al., 2004). b). Anticipate participants questions about the research and present a list of “Frequently Asked Questions” on the research web page (NIMH, 2003). c). Design a “click to accept” button for each point in the informed consent statement (Kraut et al., 2004). d). Ensure that participants cannot access the survey or discussion group until they have checked all of the boxes in the online informed consent statement (Porr & Ployhart, 2004). e). Require participants check a box indicating that they have understood the informed consent statement and what is involved in participating in the research and have no further questions about the study (Porr & Ployhart, 2004) f). Develop a questionnaire or quiz to assess participants understanding of the plain language statement (Kraut et al., 2004; NIMH, 2003).

- g). Communicate with participants via e-mail, telephone, IM, or in a chat room purposively established for the study, to respond to any questions they may have about the research (Flicker et al., 2004; NIMH, 2003; Suler, 2000).
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Deceptive Research Techniques

As in conventional research there may be phenomena or populations that researchers contend necessitate the use of deceptive techniques. The Australian National Statement on Ethical Conduct in Research Involving Humans (NHMRC, 1999) – the governing body for research in Australia - and the American Psychological Association's Code of Conduct (2002) explicitly state that deceptive techniques are in direct conflict to the principle of autonomy, as consent is not of a *voluntary* nor *completely informed nature*. However, if the data cannot feasibly be obtained via any other means, other than by deception, concealment or covert observation, the NHMRC stipulates that the researcher must ensure that:

- d. “participants are not exposed to an increased risk of harm as a result of the deception, concealment or covert observation;
- e. adequate and prompt disclosure is made and debriefing provided to each participant as soon as practicable after the participant's participation is completed;
- f. participants will be able to withdraw data obtained from them during the research without their knowledge or consent;
- g. such activities will not corrupt the relationship between researchers and research in general with the community at large” (NHMRC, 1999, p. 51).

Adhering to these four clauses is challenging, if not impossible in Internet studies involving the use of deception. Is not deception by its very nature harmful? Whilst, this is not a debate about the merits of deceptive research methods, online research employing deceptive measures most certainly may result in psychological or emotional distress, discomfort or loss of privacy and public exposure. Finn and Lavitt's (1994) infamous study of computer-based self-help groups for sexual abuse survivors provided an early example of this, when they cited the specific group names, dates and times of postings; quoting unwilling and unsuspecting participants verbatim in their publication. With this much identifying information anyone could access the BBS network (cited by name) and look up previous postings to discover the true online identities of the participants.

Employing deceptive measures to obtain data from online communities is tantamount to lurking, and is not viewed favourably by netizens. This in itself poses a significant risk, as members do not like to feel as if they have been observed and studied (Eysenbach & Till, 2001). Whilst the ethical concerns regarding the adequate debriefing of participants can be overcome when setting up purpose built online experiments (refer to Table 2), these strategies are difficult to enact when studying qualitative phenomena in existing online communities. Without prior arrangement through the informed consent process (refer to Table 2), it is very difficult to ensure that participants can be promptly and adequately debriefed at the completion of data collection. Online participants can suddenly become inactive if they answer a phone, go to the bathroom, become disinterested or succumb to any number of distractions that would impede their participation. With the click of a mouse, participants can voluntarily withdraw

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themselves from the study, or their participation may be involuntarily terminated due to program error, a computer or server crash or a power failure (Nosek et al., 2002). Can the researcher ensure that they are able to contact participants to provide adequate debriefing and attain their permission to use the data obtained from them during the research?

Table 2

Debriefing: Ethical Concerns and Recommendations

Ethical concerns	Recommendations
1. Presentation of debriefing material	<ul style="list-style-type: none"> a). Incorporate a debriefing statement in a PDF file into the research web site that can be downloaded by participants (Kraut et al., 2004; NIMH, 2003). b). Augment the debriefing statement with additional material on the research web site e.g. further information, referral lists, crisis telephone numbers, researcher's contact details (Kraut et al., 2004; NIMH, 2003). c). Anticipate participant's concerns about the research and present a list of "Frequently Asked Questions" on the research web page. This solves the dual purpose of indicating that these concerns are normal and to be expected (NIMH, 2003; Nosek et al., 2002). d). Design a "click to accept" button for each separate point in the debriefing statement (Kraut et al., 2004). e). Build a "withdraw from the study" button into each web page, which automatically directs participants to the debriefing page, even if they choose to leave the study early (Nosek et al., 2002).
2. Ensuring adequate debriefing	<ul style="list-style-type: none"> a). Pre-test the debriefing statement (Kraut et al., 2004). b). Require participants check a box indicating that they have understood the debriefing statement and have no further questions about the study (Porr & Ployhart, 2004). c). Develop a self-report questionnaire or quiz to evaluate participants' reactions (Kraut et al., 2004; NIMH,

	2003).
	d). A debriefing page could be designed to pop up automatically if participants prematurely close the browser window (Nosek et al., 2002).
	e). Create a “contact the researcher” button on each web page that automatically opens an untitled e-mail in a new window addressed to the researcher.
	f). Communicate with participants via e-mail, telephone, IM or in a chat room purposively established for the study, to respond to any concerns or questions they may have about the research (Flicker et al., 2004; NIMH, 2003; Suler, 2000).
3. Providing debriefing in the event of technological difficulties, e.g. computer or sever crash, broken Internet connection, program error or power outage	a). Require research participants to supply an e-mail address prior to participation in the study and e-mail debriefing statements at a later date (Nosek et al., 2002).
	b). Supply participants with an e-mail address, to which they can send questions or comments about the study (Nosek et al., 2002).
	c). Determine and discuss emergency protocol with participants in the event of an involuntary connection (Kraut et al., 2004; NIMH, 2003).
	d). If debriefing via e-mail, specify in the plain language statement the number of follow-up e-mails that will be sent to participants in the event of technical difficulties and/or at the completion of the study.

Privacy and Confidentiality

The greatest risk to those participating in online research is not derived from the experience of participating in the research itself, but of potential breaches in confidentiality, where personal or identifiable information is accessed, intercepted or circulated involuntarily (Kraut et al., 2004; Wishart & Kostanski, 2004). This can occur at any stage during the research process, from data collection and storage, to the dissemination and publication of results (Frankel & Siang, 1999; Wishart & Kostanski,

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2004). Breaches or compromises to the data generally occur via two avenues: ethical or moral, and technological concerns. The former is largely subjective and dependent upon the researcher's understanding of online culture and ethical sensitivity; whilst the latter is reliant upon the researcher's technological knowledge, skills and resources (Pittenger, 2003).

Perceived Level of Privacy

There has been considerable debate across academic disciplines as to whether the Internet is essentially a "public" or a "private" domain (Eysenbach & Till, 2001; Robinson, 2001; Stern, 2004). Researchers have posed endless questions attempting to conclusively resolve this debate (Eysenbach & Till, 2001; Kraut et al., 2004; Robinson, 2001; Suler, 2000). Is the site only accessible via a password, registration or subscription (Eysenbach & Till, 2001; Robinson, 2001; Suler, 2000)? Does the person or group associate a certain level of privacy with the site (Eysenbach & Till, 2001; Kraut et al., 2004; Robinson, 2001; Suler, 2000)? What number of netizens regularly use the application (Eysenbach & Till, 2001)?

The traditional dichotomy between "public" and "private" becomes blurred in relation to the Internet, and the perception of privacy appears to be largely subjective (Pittenger, 2003; Wishart & Kostanski, 2004). The Internet promotes a false sense of security in online users, as they are generally interacting with the various applications it offers from the comfort and privacy of their home or workplace (King, 1996; Kraut et al., 2004). Many people are unaware that they inadvertently leave identifying information –

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like footprints – through cookies, e-mail addresses or IPs whenever they visit a web site (Kraut et al., 2004). Walther (2002) argued that as textual discourse on the Internet is publicly accessible, it does not actually constitute human subjects research. As such, he contends that researchers are not bound by the restraints of IRBs human subjects regulations. However, other authors believe terms like publicly-private, privately-public (Berry, 2004), semi-published and semi-private (Hudson & Bruckman, 2004) are more appropriate, suggesting a less rigid adherence to existing spatial categories.

The fire fuelling this debate is principally derived from the desire of researchers to access the rich latent source of social, behavioural and archival data available on the Internet (Wishart & Kostanski, 2004). If the various applications on the Internet are deemed to be public in nature, then researchers do not need to obtain the consent of online authors to use their written word as data (Frankel & Siang, 1999; King, 1996; Kraut et al., 2004). With the lack of face-to-face interaction in online studies (particularly in asynchronous forms of text-based communication), it is easy for researchers to fall into the trap of objectifying the text on their computer screen, failing to show respect for the very real individuals behind the keystrokes (King, 1996; Stern, 2004).

Intellectual Property

If one adheres strictly to the doctrines of autonomy, justice and beneficence, than the debate over public versus private domain and human subjects research is largely negated. The Australian National Statement on Ethical Conduct in Research Involving

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Humans (NHMRC, 1999) unequivocally states that research activities must not jeopardise the relationship between researchers and the general community. Clark (2004, p. 252) most eloquently articulated this position stating "it makes sense in terms of sustaining the goodwill of my participants for me to treat all data that I collect about and from the group as strictly private unless given permission to see it otherwise". Furthermore, there is a fervent online culture of individuals who use the Internet explicitly to express their voice. As such, the publication of direct quotations could be considered tantamount to intellectual property theft (Eysenbach & Till, 2001; Lawson, 2004).

Screen Names: Privacy and Personal Investment

Users, netizens and cybercitizens typically expend considerable time and energy developing their screen name, pseudonym, handle, nick (nickname), moniker or avatar; and therefore place a significant personal investment in them. This is an important consideration in the minimisation of potential harms to participants (Frankel & Siang, 1999; King, 1996). Individuals often unwittingly use identifying information in the creation of their screen name, such as portions of their actual offline name or initials; physical characteristics; the names of their street, suburb or post code; the names of pets or family members; age or year of birth; and favourite hobbies, sports, activities or food (e.g. Jane Doe 1989, Ivanhoe blonde 28, Rex St Kilda 91). Most places of employment incorporate staff members' real names in the creation of their email addresses and usernames for computer-mediated business activities. Many people naively use these

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email addresses to register for and engage in online applications, with little forethought to the highly identifiable content they are leaving behind. In fact, in numerous asynchronous applications registrants' full email addresses are displayed to other group members (Lawson, 2004). Given this, it appears imprudent for researchers to unconditionally guarantee confidentiality to participants. Whilst every effort should be given to maintain the privacy and confidentiality of participants, they should be forewarned that the very nature of the medium makes it very difficult to unequivocally implement and police it (Clark, 2004; Lawson, 2004).

Technological Concerns

The infrastructure of the Internet and the hardware that it operates from has evolved exponentially since its commercialisation two decades ago (Keller & Lee, 2003). To remain relevant, technology must continue to evolve at this rapid pace. This continual state of flux is challenging to the average researcher in psychology, who must become au fait not only with their own field of interest, but with the technology they wish to embrace methodologically to conduct their research (Frankel & Siang, 1999; Keller & Lee, 2003). There are many considerations, risks, moral and ethical dilemmas that may arise throughout the research process, which the technological novice is likely to be unaware of upon embarking on an Internet-mediated study. Mental health professionals typically do not possess the technological training to adequately prepare them for a comprehensive understanding of the serious moral and ethical breaches to participants' privacy and confidentiality that can occur in this dynamic and complex medium (Mathy,

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Kerr, & Haydin, 2003). As Mathy et al. (2003, p. 84) succinctly stated "...the mere ability to send and receive e-mail and navigate the World Wide Web is a grossly insufficient basis on which to decide to provide clinical services or conduct clinical research online". Researchers should realistically assess their own technological knowledge and skills, developing an understanding of their limitations, prior to initiating online research. Gaps should be addressed via consultation and collaboration with experienced professionals in information technology, software development, ethics and Internet-mediated research (Fisher & Fried, 2003; Mathy et al., 2003; National Institute of Mental Health, 2001).

Table 3

Privacy and Confidentiality: Ethical Concerns and Recommendations

Ethical concerns	Recommendations
1. Ensuring the anonymity of research participants	<ul style="list-style-type: none"> a). Inform participants that whilst every effort will be made to ensure their anonymity, it cannot be guaranteed (Porr & Ployhart, 2004). b). Explicitly list the steps taken to maintain anonymity (Flicker et al., 2004). c). Consult with experts to limit the access of search engines to any forums purposively established for the research, particularly IRC, IM and bulletin boards (Eysenbach & Till, 2001; Flicker et al., 2004). d). If participants are invested in their pseudonym, suggest they develop an alternate pseudonym for the study. e). Disguise all pseudonyms and online communities (Cherny, 1999). f). Refrain from using any details that identify a particular online forum or community (Cherny, 1999). g). Any individuals that could be identified online or in real life by their published descriptions in research, could be divided into multiple characters, as opposed to being

	described as a “whole” (Cherny, 1999).
2. Protecting the privacy and confidentiality of participants	<ul style="list-style-type: none">a). Inform participants that confidentiality cannot be assured (Clark, 2004).b). Explicitly list the steps taken to preserve confidentiality and inform participants of the sources of all potential breaches in confidentiality (APS, 2004; Flicker et al., 2004).c). Inform participants of how the data will be used, recorded, stored and disseminated (Fisher & Fried, 2003; NIMH, 2003).d). Only collect demographic data that is pertinent to the research (Michalak & Szabo, 1998).e). Privacy screens could be utilised in the office to shield monitors when viewing particularly sensitive data (Fisher & Fried, 2003).
3. Protecting the confidentiality of the communication channel between the researcher and participants	<ul style="list-style-type: none">a). Inform participants of all sources of potential breaches in confidentiality (APS, 2004; NIMH, 2003).b). Employ encryption software in data transmission, storage and recovery (Kraut et al., 2004).c). Inform participants that e-mail is not a secure form of communication and may be intercepted by a third party, or read by another individual sharing the hardware at either end of the communication (Fisher & Fried, 2003).d). Remind participants to be aware of their physical surroundings when participating in online research in public places, i.e. university, library, open plan office (NIMH, 2003).e). Recommend that participants avoid writing any confidential information in e-mail or IM unless encryption software is used (Fisher & Fried, 2003).f). If an electronic mailing list is used in the data collection process, remind participants to reply directly to the researcher and not to the group as a whole (Michalak & Szabo, 1998).g). Consult with technology personnel to ensure virus and security protection software is up to date (Fisher & Fried, 2003).
4. Maintaining confidentiality during data storage	<ul style="list-style-type: none">a). Consult or seek training in the technology of securing information over the Internet (National Institute of Mental Health, 2001).b). Consult with technology personnel on the storage of

data on your institutional or personal hard drive, server or via any removable and rewritable data storage devices (Fisher & Fried, 2003).

- c). Password protection and encryption should be employed for all sensitive data, directories and files (APS, 2004; Fisher & Fried, 2003).
- d). Avoid sharing passwords and change them regularly, steering clear of the obvious and easily deduced (Fisher & Fried, 2003; Reips, 2002).
- e). Only provide access to the directories containing the research data to those directly involved in the research process (Kraut et al., 2004).
- f). If research assistants are required to access the research data, ensure that they are trained appropriately, to adequately protect the confidentiality of participants (Fisher & Fried, 2003).
- g). Do not store any identifying information directly on the research web site (NIMH, 2003).
- h). Ask participants not to use their surnames or formerly established pseudonyms as their log-in for the study (NIMH, 2003).
- i). Securely store any portable (i.e. laptop computer) and removable data storage devices (i.e. floppy disks, optical disk storage, USB flash memory drive) (Fisher & Fried, 2003).
- j). Distort any auditory or visual images of participants (Fisher & Fried, 2003).
- k). Collect and record any demographic data separately from the research data, using an arbitrary code to link the two (Kraut et al., 2004).
- l). Remove any specific references to the type of online domain (e.g. IRC, bulletin boards, e-mail, IM) from the data, and store this information separately (King, 1996).
- m). Consult with an expert when disposing of, or upgrading a computer to guarantee all traces of the data stored are permanently removed (Fisher & Fried, 2003).

5. Using quotations in research publications

- a). Offer participants the option to negotiate the level of their consent with regards to the use of their pseudonym, text and authorship of their discourse in a published academic paper (Lawson, 2004). Lawson (2004) identified five levels of consent that participants could select from:
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1. no publication of pseudonym or text.
 2. publication of *either* the pseudonym *or* the content with strictly no identifying information.
 3. publication of *either* the pseudonym *or* the content with strictly no identifying information on the proviso they may review the paper prior to publication.
 4. publication of both the pseudonym and the content, crediting the participant as the author of their discourse.
 5. publication of both the pseudonym and the content, crediting the participant as the author of their discourse, on the proviso they may review the paper prior to publication (p. 93).
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Conclusion

A tenuous balance currently exists between the advantages of Internet-mediated research and the ethical risks inherent in this medium (Mathy et al., 2003). Whilst the medium in which the research is conducted and the methodologies may have changed, the code of ethics governing human subjects research has not. The fundamental ethical tenets of beneficence, autonomy and justice still regulate our research practices (Ess & Jones, 2004; Kralik et al., 2005). These principles must be adhered to and researchers need to act with moral responsibility and integrity in Internet-mediated research, just as they would if encountering participants in a face-to-face setting (Azar, 2000).

The principle of beneficence dictates that researchers are required to minimise potential risks and possible harms to participants (The Belmont Report, 1978). The greatest threat in online research is to the autonomy, privacy and confidentiality of participants (Kraut et al., 2004; Wishart & Kostanski, 2004). The loss of reputation and

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trust in the research community at large is also a significant concern when zealous researchers undertake studies online without the appropriate training, collaboration or consultation. If researchers do not possess the technological expertise to ensure that all potential harms are minimised to the fullest extent of their power, than more traditional methodologies should be adhered to (Mathy et al., 2003).

If mental health professionals continue to flood the World Wide Web at the rate with which they have over the past decade, then perhaps IRBs should consider mandating a core subject in online research methodologies for undergraduate and postgraduate students. Ideally, the National Health and Medical Research Council (NHMRC) could develop a set of ethical guidelines that work within the existing ethical framework to govern our research practice online, reducing the moral and ethical ambiguities that are rife with this dynamic and extraordinary medium.

The recommendations suggested here are by no means comprehensive or definitive. However, they do offer some rudimentary guidelines for researchers considering online experimentation. A constructive multidisciplinary discourse should be fostered between academics and professionals from the mental and medical health sciences, technology and ethics to promote innovative, methodologically sound, ethically and morally driven research online.

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