Effects of synchronous chat-based on-line cognitive behavior therapy on study related anxiety and behavior

Anoushka Rassau
Edith Cowan University

Effects of Synchronous Chat-Based On-Line Cognitive Behavior Therapy

on Study Related Anxiety and Behavior

By

Anoushka Rassau (B. Psych)

A Thesis Submitted in Partial Fulfillment of the Requirements for the Award of

Master of Psychology (Clinical).

At the Faculty of Community Services, Education and Social Sciences,

Edith Cowan University,

Joondalup, Western Australia.

July, 2001

Declaration

I certify that this thesis does not to the best of my knowledge and belief:

(i) . incorporate without acknowledgement any material previously

submitted for a degree or diploma in any institution of high education;

(ii) contain any material previously written by another person except

where due reference is made in the text: or

(iii) any defamatory material.

Note on Format

The two manuscripts presented in this thesis were formatted to conform to the submission requirements of the journal *Behavior Therapy*. A photocopy of instructions to authors as specified by the journal's publishers appears in Appendix Q.

Acknowledgements

Table of Contents

List of Appendices

Running Head: THE INTERNET CHAT ROOM AS A THERAPY MEDIUM

Synchronous text-based Internet environments as a therapy medium

Anoushka Rassau

Edith Cowan University, Perth, Australia

Abstract

Very little research is currently available about therapy conducted in chat-based Internet environments. Most of the existing research concerns therapy delivered via email or on-line support groups. For this reason, this review first presents an overview of literature concerning practical issues relevant to Internet-based therapy in general and then presents a review of the research that is available regarding therapy provided in chat-based Internet environments. The literature reviewed in this paper has been obtained from several on-line databases and Internet search engines. The available research on chat-based therapy has produced mainly anecdotal or inconclusive results. There is a need for controlled research that more clearly displays the relationship between an intervention provided in a chat environment and the participants' problems.

Synchronous chat-based Internet environments as therapy mediums

Suler (2001) defines 'cybertherapy' as any psychotherapeutic environment mediated via computer communication and designed, facilitated, or prescribed by a mental health professional. The definition encompasses any form of professional communication occurring between clients and mental health professionals utilizing computers. This ranges from web pages designed to provide information on mental health topics to audio-visual conferencing between clients and mental health professionals, and to stand alone self-help computer programs. Suler's definition includes text-based communications (e.g., via emails and chat-rooms), which might either occur in an imaginary setting (e.g., through fantasy-based backgrounds and personas) or those where both parties maintain their real identities. Also included in Suler's definition are synchronous communications (occurring in real-time, such as chatting) and asynchronous communications (occurring with a delay in time such as emails and bulletin boards). Suler's comprehensive definition offers an overall picture of the variety of available computer mediated communications and how they can be combined to offer different psychotherapeutic experiences.

It is beyond the scope of this paper, however, to review the literature available on all these forms of communication. Its scope is limited to therapy occurring on an on-going basis between clients and therapists in synchronous text-based environments (i.e., chat-based environments). Chat-based on-line therapy involves the client and therapist using synchronous text messages to communicate in a private Internet chat environment.

This paper begins with a brief outline of the use of computers in mental health to highlight modern trends in the field. Due to the fact that the field of on-line therapy has only begun to develop very recently, there is a limited body of research currently

available on the topic. Most of the existing research focuses on therapy delivered via email or on-line support groups. Very little research is currently available about therapy conducted specifically in chat environments. Due to this, an overview of conceptual issues related to the field of on-line therapy in general (i.e., email-therapy, on-line support groups, chat-therapy and bulletin boards) is provided before available research on chat-based therapy is reviewed. Finally conclusions drawn from the reviewed research are discussed.

The literature reviewed in this paper was obtained by searching the following on-line databases; PsychInfo, The Academic Research Library, The Electric Library, The Mental Health Collection, Expanded Academic ASAP International Edition and Current Contents (ISI). The nature of the field has led to many mental health professionals posting papers about Internet therapy on the Internet. Therefore the Internet search engines Metacrawler, Alta-Vista and Google were also used to locate relevant literature from Internet publications and other sources. Mental health professionals interested in the area of on-line therapy were also contacted for relevant research papers.

Background

The first steps toward the use of computers in the field of mental health can be traced to 1966 when Joseph Weizenbaum created the Eliza program. Though this program was an early experiment in Artificial Intelligence, therapists have used it as a prototype for computer *simulated* therapy. Similarly Fleming's (1990) development of the Listener program is another example of therapeutic software. Newer programs tend to focus on more specific goals such as stress management and overcoming depression. With programs such as these the user receives a pre-programmed response

from a computer and the ensuing dialogue resembles a non-directive therapy session (Cutter, 1996).

Also available are diagnostic programs that have assessment goals or those that facilitate the career guidance process. This is an example of computer-*assisted* therapy where computers supplement a therapy process. The development of the Internet however has provided an alternative form of distance therapy. This provides the third example of how computers interact in the therapy process: computer *mediated* therapy, which is used for therapeutic relationships over distance (Sanders & Rosenfield, 1998). Occurring either through email or real time conferencing ('chatting'), computer-mediated therapy utilizes the typed word to establish a therapeutic relationship. Email therapy involves the exchange of asynchronous text messages between therapist and client (i.e., with a time delay between the receiving and sending of a message depending on when each checks their email). Chat therapy involves the exchange of synchronous text messages between therapist and client (i.e., with no time delay between replies as both therapist and client are at their respective computer terminals at the same time to exchange messages promptly).

The Internet also provides support networks where people share stressful and sometimes very serious problems with a group of unseen and unknown others through group emails or discussion forums. Professionals and clients have joined on-line forums devoted to subjects like mood disorders, drug addiction or unusual sexual preferences (Stein, 1997). The forums offer the advantages of rapid and easy communication, and ready access to information and support (Wallace, 1999). Such forums lead to mailing lists where members of the support groups send each other emails relating to their area of concern and virtual conversations develop around various themes and issues (Stein, 1997). Most of these groups are asynchronous (i.e.,

based on Email exchange). However, synchronous groups also exist through Internet Relay Chat. Although email allows the therapist and the client to keep in touch at any time, Barak (1999) states that it might impair the spontaneity of reactions that might otherwise benefit the therapeutic process.

As technology advances and the processing speed and bandwidth of personal computers and Internet servers increase, it is expected that audio-visual conferencing facilities will improve and people will also be able to have therapy sessions in imaginary or fantasy settings through virtual reality (Barak, 1999; Suler, 1998). In fact The University of Washington Medical Center claims to have successfully treated a client with arachnophobia using a virtual environment (Hitlab, 1999). While there are at least 300 therapists offering mental health support over the Internet (Segall, 2000) little research is available to assess the effectiveness of this medium in helping others (Barak & Wander-Schwartz, 2000; Cohen & Kerr, 1998; Mitchell & Murphy, 1998a; Wallace, 1999). An overview of issues concerning the provision on on-line therapy will be presented before available therapeutic research is reviewed.

Overview of Issues Relevant to On-line Therapy

Due to the newness of the field of on-line therapy there is much written about the special concerns of providing such services (e.g., Bloom,1998; Kwon, 1999; Miller,1996; Stofle,1997; Suler, 1996). Discussion has focused on eight principal issues; (1) Advantages and disadvantages of on-line therapy; (2) Legal and jurisdictional issues; (3) Confidentiality and security; (4) Therapist competence; (5) Suitability of population for on-line therapy; (6) Suitability of problems for on-line therapy; (7) Suitability of therapeutic approach, and; (8) Interpersonal interaction in text-based chat environments. Any mental health professional providing services via

the Internet should be aware of current trends in these areas. Each of these areas is discussed briefly below.

<u>Advantages and Disadvantages of On-line Therapy</u>

Mental health professionals have an obligation to inform their clients of the risks associated with any therapeutic intervention that they use. The Internet is a relatively new medium of communication. It offers mental health professionals many opportunities to reach people who could benefit from psychological interventions but for various reasons might be unable to reach the traditional mental health system (e.g. for geographical, physical or other reasons such as time management) (Childress, 1999). However as mental health professionals, our current level of experience with the medium of on-line therapy is limited and we must endeavor to understand how these limitations might potentially affect its delivery (Childress, 1999). The risks associated with on-line therapy must therefore be investigated along with the benefits.

On-line therapy provides an opportunity for people who are geographically or physically restricted from seeing a therapist (Childress, 1999; Murphy & Mitchell 1998a). For example people living in rural and remote areas might have less access to psychological help than people living in metropolitan areas. It might be more economical to establish several computers with connections to the Internet in rural areas through which people could access at least preliminary psychological services than to support professionals who travel to remote areas a few times a year. Additionally, people with temporary or permanent physical handicaps who are not be able to easily access services because of transport or health reasons might greatly benefit from therapy being provided via the Internet (Sampson, 1998). On-line therapy could also serve as an introduction to the mental health profession. On-line professionals might be able to identify people who could benefit from therapy but

who would otherwise slip through the traditional mental health system. Sampson (1998) states that the Internet might also provide increased awareness of available therapy services and self-help psychoeducational resources, and enhance communication between therapists and clients in between face-to-face sessions.

Wallace (1999) discusses the particular benefits that anonymity has for individuals from stigmatized populations. If one has a problem that might not be viewed favorably by close friends or relatives, it might be easier to discuss it with an unseen therapist or an Internet support group (Phillips, 1996). Gries and Klien (1980) and Lucas, Mullins, Luna and McInroy (1977), concluded that people are more likely to reveal intimate details of their problems to a computer than a human. Similarly, Hellerstien (1990) concluded that the anonymity provided by electronic communication makes it easier for people to disclose information. The same anonymity offered by the net also makes it an ideal environment for disclosure (Wallace, 1999).

The lack of visual and auditory cues is the most obvious risk posed by on-line therapy. Therefore any therapy that has been derived from face-to-face therapy might not be pertinent to on-line text-based communication. New models that are applicable to on-line text-based therapies might need to be developed (Childress, 1999). Diagnosis is also somewhat restricted by on-line therapy. Without visual and auditory cues the ability to develop a suitable treatment program is also hampered. This might be avoided by meeting face-to-face first for an initial interview and assessment. Additionally without these cues to put the spoken word in context there is also the potential for miscommunication (Grohol, 1999). To avoid possible misunderstandings the client should agree to inform the therapist if he/she finds interpretations made by the therapist uncomfortable (King & Poulos, 1998).

Another problem that arises from the lack of visual and auditory cues is that the therapist has no means of verifying the client's identity. This is a concern in the area of treating minors without parental consent (Australian Psychological Society, 1999), and in dealing with crisis areas such as suicidal ideation or sexual or physical abuse (Childress, 1999). The other concern is that people might pretend to be therapists and defraud money from people or access confidential information if the therapist has not secured access to his/her computer (Barak, 1999; Plaut, 1997). In order to decrease concerns that it will be the therapist and the client at the separate terminals and not imposters, a password could be agreed upon by both parties that can verify their on-line presence. Additionally computer terminals should be password protected to ensure that only the client and therapist will have access to the terminals. Mental health professionals should provide information about themselves regarding their identity and qualifications as well as a means for clients to verify their identity (International Society for Mental Health On-line, 2000).

<u>Legal and Jurisdictional Issues</u>

The cross-boundary nature of the Internet complicates the legal and jurisdictional issues relating to on-line therapy. Courts often do not use therapists' terms to determine if a therapeutic relationship has been established, but rather the client's expectations. It is possible that courts (in the U.S.) might rule that a therapist's web page might be an advertisement (or a conducting of business) in a state different to the therapist's state of residence and, therefore, might subject the therapist to legal authorities of that other state (Childress, 1999).

The jurisdictional authority of issues relating to cyberspace is in the process of being established. In Australia, liability insurance policies state that the location of the service provider will be considered the point of reference (APS, 1999). Due to the

variations in local laws regarding age of consent, mandatory child abuse reporting and

parental consent to provide services, the APS (1999) suggests that therapists become

familiar with the laws concerning these issues across borders. Alternatively they

should advertise that their on-line services are not recommended for international or

interstate audiences. Due to the increasing number of professionals offering a range of

services on the Internet, several professional bodies have developed ethical guidelines

that must be adhered to (see APS, 1999; eHealth, 2000; NBCC, 1998).

<u>Confidentiality and Security</u>

There are four areas that have been identified by researchers as potential

causes of breaches of confidentiality: transmission, the therapist end, the client end

and legal subpoena (Childress, 1999). Transmissions can be protected by encryption

codes, but it is possible that computer hackers will break into these. If the therapist

saves client information onto a hard drive with Internet access, hackers could still

break into it (Stricker, 1996). Clients should be made aware of this possibility.

However, it would be more likely and easier for someone to eavesdrop outside a

therapy room than hack into a computer (see Grohol, 1999). In order to ensure

confidentiality it has been suggested that encryption programs be used wherever

possible in on-line therapy (Childress, 1999). Different chat programs allow different

levels of security. The therapist must be cautious about the program he/she chooses

(Grohol, 1999).

The email address used by the therapist should be reserved only for

communicating with clients in order to prevent accidental forwarding to other

persons. The clients should also be asked to take special care when sending email

messages to the therapist (Grohol, 1999). In the United States an employer has the

right to read communications presented on company computers. Clients should be

made aware of this possibility if they communicate with their therapists from work
(Grohol, 1999). It is unclear if the client/therapist privilege includes those
communications over the Internet (in the United States) (Plaut, 1997). The status of
this issue must be investigated in the country in which the therapy occurs.

Therapist Competence

The lack of formal training in text-based communication might negatively
affect the therapists competence in issuing text-based interventions (Stofle, 1999;
Uecker, 1997). The skills of the therapist in this new medium might affect the quality
of clinical care and the therapist liability if legal proceedings should arise from the
therapist's on-line work (Childress, 1999). It is important that the therapist obtains
training in on-line therapy methods (Barak, 1999). The APS (1999) states that
therapists cannot be sure of their ability to provide on-line services as there is little
research comparing the efficacy of on-line therapy with in-person therapy.

Suitability of Population

Mickelson (1997) studied electronic and in-person support groups and found
that the type of people who sought each form of support were different. Those who
sought on-line help reported more stress and believed that their problem was more
stigmatizing. Men in particular were attracted to this environment (Barak, 1999).
MaKenna and Borgh (1998) compared newsgroups that focused on concealable
stigmas like homosexuality, drug addiction and bondage with visible stigmas like
obesity, and baldness. They concluded that those with concealable stigmas found their
support group more important, possibly because they are unlikely to find others in the
real world with the same stigma to talk with, especially if they have not 'come-out'.
Salem, Bogar and Reid (1997) studied an on-line support group for depression and
concluded that people convey high levels of acceptance similar to in-person

communications. Moreover, while there are populations who will be more attracted to on-line therapy, there are also groups who will find on-line therapy their only option, such as people limited by physical disability or geographically remote locations.

<u>Suitability of Problems</u>

Before the commencement of treatment, clients should be made aware of the limitations of the medium in dealing with certain problems such as those involving disassociative or hallucinatory symptoms (APS, 1999). Both parties should agree beforehand about the type of issues to be discussed. If alternate issues arise during treatment that the therapist is not equipped to handle, appropriate references to sources in the clients local area should be made (International Society for Mental Health On-line, 2000). Stricker (1996) suggests that a therapist has the same general obligations to both on-line and in-person clients. If an in-person client was diagnosed as severely depressed with suicidal ideation, the therapist would have the option of extending the session until the crisis had passed, arrange for medical consultation or hospitalization and the help of family and friends. None of these options are guaranteed on-line.

In general, chat-based therapeutic relationships lack the contract where a licensed professional accepts responsibility for the treatment of a clients' problem (Cutter, 1996). Particularly in the case of isolated people who seek assistance through anonymous media, care must be taken to avoid situations that might not be effectively handled (Stricker, 1996). The APS (1999) states that therapists should warn clients that certain problems are not suitable for on-line counseling; such as suicidal ideation and conditions that pose risk to others/ self or require medication. On-line clients with these problems should be referred appropriately. Young and Suler (1998) state that the Internet might be the best medium through which to treat addictive and deviant

behavior among Internet users. However, there appears to be an inclination toward the opinion that in-person therapy will always be superior to on-line therapy, (Stricker, 1996; Wired News, 2000) even though there is little research investigating the area.

Suitability of Therapeutic Approach

The question of whether on-line therapy can be considered psychotherapy is under debate. Laszlo, Esterman and Zabko (1999) state that because of the absence of face-to-face contact, existing psychotherapeutic theories would need to be tailored to suit on-line therapy. Several writers have proposed theoretical approaches that can be adapted to fit on-line therapy. These include Cognitive Behavioral Therapy, Rational Emotive Therapy, Narrative Therapy and Solution Focused therapy. Other approaches that have been suggested such as Bibliotherapy and Psychoanalysis (Suler, 1998; Uecker, 1997), but not much detail is provided about their implementation.

Therapeutic approaches such as Cognitive Behavioral Therapy and Rational Emotive Therapy examine conscious thought processes and challenging irrational beliefs. Gabriel and Holden (1999) (cited in Lazslo et al, 1999) discussed how these could be adapted to text-to-text communication. More specifically Murphy and Mitchell (1998b) discussed how the process of writing can help clarify problems and promote change because people might be better able to see contradictions in their belief systems when they are available in print before them. King, (2001) and Pennebaker and Seagal (1999), conducted research into the benefits of using writing as a therapy tool and found that their participants benefited from using writing to record their feelings. Narrative Therapy and Solution Focused approaches are also recommended for similar reasons.

Interpersonal Interaction in Chat Environments

In addition to considering risks and ethical guidelines, a therapist should aim to understand how interpersonal communication differs on-line from that of in-person encounters. Current limitations in technology mean that typed text is currently the foremost means of 'talking' on the Internet.

Miller and Gergen (1998), analyzed interactions between people on a 'suicide network' on the Internet by categorizing and coding the statements people made. They found that the network provided much that could usually be obtained in close friendships in face-to-face settings. Suler (1999) stated that people might prefer chat environments because of their non-visual and non-auditory nature. This suggests many people would consider chat environments an effective means of communication.

In some ways text-based communication is similar to face-to-face communication, although they are strikingly different in other ways. There are no changes in voice, no body language, facial expressions or even a visual-spatial environment to use as context (Barak, 1999; Wallace, 1999) in text-based communication; just typed words. The lines of dialogue that appear on screen in a chat room can appear disjointed (King, 1995), but with practice it is possible to mentally filter out dialogue that does not interest you and to concentrate on people and topics that do (Suler, 1997a). Some people find the medium lacking and the experience disorienting (D. Mitchell, personal communication, September 15th, 1999). Others are amazed at the way in which people creatively communicate despite these limitations (Suler, 1997b).

It is easy to understand why some people assume that the lack of face to face cues can result in numerous misunderstandings, that would make this medium

inappropriate for psychological consultation. Suler (1997b) in his paper on the psychological dynamics of synchronous chatting stated that in his analysis of many saved chat room transcripts he did not encounter any examples of people being confused or misunderstood. He did however identify situations where one person was not exactly certain about what the other person meant. These involved situations where humor and sarcasm were being conveyed, which in face to face encounters can be indicated by a chuckle or tone of voice. The incidents occurred because of the omittance of a 'smiley' [:)] or a 'winky' [;)] which are usually used to convey humor. The situation was usually resolved by a quick explanation with the use of a smiley or a winky. Based on his observations, Suler went further to state that despite the lack of visual and auditory cues, people do understand each other.

The time lag created by waiting for one person to type sometimes leaves a person uncertain about when to send his/her response. In order for one person to express a complex idea, a chat partner might have to refrain from responding and 'listen' to what the other person has to say (Suler, 1997b). Additionally it might take a while for users to become accustomed to each other. Initially most conversations begin with a staccato style where brief sentences or fragments of sentences are used. This mostly occurs because none of the face-to-face cues are available. People feel the need to test the waters by examining the characteristics of people around them (Suler, 1997b).

From the 1950's to the 1980's Erving Goffman has produced work on how people evaluate the meaningfulness of face-to-face interactions. One of the things that people require is a 'frame' to place the interaction in context (Goffman, 1974). In face-to-face meetings or even on the phone people know whether the interaction is a customer order, a chance encounter in the street or a more personal encounter (Miller,

1995). When meeting someone on the Internet the frame is not as clear, as it is easier for people to lie about their background and intentions. Therefore, in providing psychological support over the Internet it is advisable that both the client and the therapist are clear about their roles and expectations. It is imperative that the therapist states the type of support offered and what kinds of problems might be inappropriate to deal with via the Internet; for example hallucinations and delusions. One should also clarify the number of sessions to take place and the off-line contact arrangements so that a clear framework is created for the interaction.

Since psychotherapeutic behavior is apparent on the Internet in the form of opportunities to offer support and share pain (Cutter, 1996), mental health professions should attempt to avoid considering whether in-person interactions are better than cyberspace interactions in the therapeutic relationship. The question that should be asked is does the Internet have a place in the field of psychology, and if it does what are its boundaries.

The negative aspects of on-line therapy suggest that in most cases it cannot replace traditional in-person support. However, its benefits suggest that it does have a place in the field of psychology. In particular, to reach specific populations that have no access to other support services it would serve as a form of distance therapy. In order to investigate the effectiveness of using chat based Internet communication in providing therapeutic support, one would need to target a specific population and evaluate the eventual results. In order to maintain control of the environment for the purpose of therapeutic relationships it might be advisable to; have a limit of one client per session, have a procedure to handle potential misunderstandings; that is, ask for clarification if unsure (Barak, 1999), (3) in case of connection failure, agree to wait five minutes and reconnect or make contact by phone (D. Mitchell, personal

communication, September 15th, 1999). Alternatively make sessions last no more than half an hour to improve the chances of clear connection.

<div align="center">Review of Therapeutic Research</div>

To date, research into the area of Internet therapy has focused on the use of email, bulletin boards, and support groups. Comparatively little research is available about the use of chat environments in Internet based therapy. An overview of the studies employing email, support groups and bulletin boards is provided to illustrate the range of work being conducted in the area, followed by a more detailed review of studies involving chat therapy is provided after.

Overview of Research into Email Therapy and On-line Support Groups

The body of studies available on Email therapy and on-line support groups is growing. Initially research into these areas was mainly qualitative, with their results consisting of descriptions of the therapists' and clients' personal experiences with the medium. For instance, King, Engi and Poulos (1998), presented a case study on using an Email support group to assist a client with a rare genetic disease. As a result of learning about the experiences of other sufferers the client is reported to have become more open to discussing his personal feelings. Mitchell and Murphy (1998b) presented a case study to highlight the challenges of email therapy. They addressed issues like security and technological failure and reported that the participant found the process helpful. In both of those studies, only a brief statement is made regarding results. Stein (1997) surveyed the users of an on-line Obsessive Compulsive Disorder (OCD) mailing list and reported the percentage of users who were patients with OCD, family members of patients or mental health professionals interested in the area. He also reported the percentage of people who found the support group beneficial for

different reasons (information, support, etc.). Stein concluded that most users found the group useful.

As researchers have become more familiar with the technology and its potential for use in therapy, more empirically based research has been produced. Strom, Pettersson and Andersson (2000) investigated the effectiveness of a self-help treatment program conducted via the Internet to treat recurrent headaches. Participants were provided with educational information on a Web page and the results of self-monitoring exercises were reported weekly on the web site. Significant reductions in headaches were reported for treated participants and the authors concluded that the Internet has potential as a complementary tool in the treatment of headaches. Lange, Schrieken, Van de Ven, Bredeweg and Emmelkamp (2000) provided structured writing therapy via email to participants with posttraumatic stress and reported clinical improvements in most of the participants as measured by the Symptom Check List (SCL-90), Impact of Event Scale (IES) and the Somatic Dissociation Questionnaire (SDQ).

Review of Research on Therapy in Chat Environments

There is comparatively little research available on therapy conducted in a synchronous chat based Internet environment. Barak and Wander-Schwartz (1999) state two possible reasons for this. Email has been available for a longer period of time than chat-rooms; and chat-rooms have only recently improved from the Internet Relay Chat (IRC) style environments to more user friendly environments that are more easily accessible (based on JAVA applications). In my search of the literature search only four papers directly relevant to the topic of interventions provided in a chat environment. These are reviewed below.

Phillips (1996), in an unpublished study at Rider University, compared the observations she made of a chat room support group and an email support group with those she made in face-to-face support groups. All the groups that were observed focused on the experiences of adult children of alcoholics. The study was used to investigate the special features of the on-line groups. For instance, the chat group experienced problems with network connections, were able to remain anonymous, and held private conversations with individual members of the group. Both the chat and email groups were able to keep records of their group sessions. Phillips also lists the rules that people followed while chatting ('netiquette'), such as respecting other peoples' privacy and not typing anything that you wouldn't say in person to someone. Phillips then lists the advantages of the on-line groups such as the anonymity and convenience and the disadvantages such as problems with network connections and the fact that not everyone has access to the Internet. Based on her observations the author stated that the on-line groups provided far more advice giving and feedback than the face-to-face group. The author concluded that users of the on-line groups do find them useful, and that the members of the on-line groups engaged in more social communications than the face-to-face group (e.g. became less formal and more trusting of each other). These conclusions were based on the authors observations and were not quantitatively analyzed..

Sander (1996), a psychoanalyst, presented a case study on group couples therapy (consisting of 2 couples) conducted in an Internet chat room. Sander described how, due to a babysitting conflict experienced by his clients, he was prompted to conduct some of his group therapy sessions via an Internet chat room. The results were anecdotal, based on Sander's interpretation of the therapeutic process. Three sessions were conducted in the chat room after which therapy was

terminated. Sander reported that his clients found the slowness and staccato style of responses frustrating, though he attributes this in part to lack of familiarity with the medium. He does, however, describe a segment of one of the session transcripts from which he concludes that therapeutic interpretations can be made from chat-room conversations in the same way as from in person interactions. He also suggested that as technology and peoples' familiarity with the medium improves, more therapeutic possibilities would develop in the medium. However, there is nothing to support the therapist's own opinion of the success of therapy as the clients found the medium frustrating, making the results inconclusive.

Barak and Wander-Schwartz (2000) (psychologists) conducted an evaluation of brief group therapy in an Internet chat room. The participants were university students (n=15) who were placed into two quasi-experimental groups (according to their own choice). One group consisted of 6 participants who selected the chat-room therapy group and the other consisted of 9 participants who selected the standard face-to-face group. A no-treatment control group of 7 participants also participated. Both treatment groups received time-limited dynamically oriented therapy from experienced therapists. The exact nature of the participants' presenting problem was not stated. Three dependent measures were used; Measures of Therapy Impact (self-esteem, social relations and well being as measured by scales from Hudson's 1982, clinical measurement package, cited in Barak and Wander-Schwartz, 2000); Group Process Variables (e.g. cohesiveness, action orientation, personal exposure and perceived therapist control. Moose, 1982, cited in Barak and Wander-Schwartz, 2000); Evaluation Questionnaire to assess participant satisfaction.

The research questionnaires listed above were provided to the participants before and after the intervention. The results revealed no statistically significant

improvement in the experimental groups on the Measures of Therapy Impact, though both groups were reported to show some trends toward improvement. The exact nature of these trends was not indicated. Investigation of the Group Process Variables (analyzed qualitatively) revealed some similarities between the groups, with the chat-room group reporting higher levels of aggression, action orientation and therapist support and control. The Evaluation Questionnaire revealed no statistically significant differences in the satisfaction levels of both groups. Barak and Wander-Schwartz stated that statistical non-significance of the quantitative measures were due to the small sample sizes and limited number of sessions. Barak and Wander-Schwartzs' conclusion that chat based therapy can be a beneficial process for individuals, is based on trends evident in their results. Their results, however, did not produce clear enough evidence (i.e., statistically significance results) to support their assertion.

The studies by Barak and Wander-Schwartz (2000), Phillips (1996) and Sander (1996) suggest that synchronous chat-based environments might benefit group work. Sander's (1996) opinions are not, however, supported by clear evidence. Phillips' (1996) conclusions are based on her observations of on-line groups, but she was more concerned about the differences between face-to-face groups and on-line groups than therapy effectiveness and therefore did not focus on this issue. Although Barak and Wander-Schwartz (1999) reported trends that indicate improvements in the dependent measures, they did not find any statistically significant improvements to support their opinion. Investigations into the effectiveness of individual therapy on the individual client in a chat environment might clarify whether beneficial effects observed in the research described above are due to group processes or therapy effects. It might also clarify whether the results Sander (1996) and Barak and Wander-

Schwartz (1999) reported were due to difficulties specific to group work conducted in chat environments.

Cohen and Kerr (1998) conducted a study (N=24) to evaluate the effectiveness of therapy in a chat environment to reduce anxiety in undergraduate students. The participants were randomly assigned to two experimental groups, a chat-room group and a face-to-face group. Six counselors (male graduate students in counseling psychology) provided the participants with one therapy session consisting of issue identification, issue exploration, and discussion of solutions. The structure of the therapy session for both experimental groups was the same. The dependent measures were; the participants' anxiety levels as measured by the State-Trait Anxiety Inventory (STAI) (state-scale); the participants' perception of the counselors as measured by The Counselor Rating Form (CRF) (Barak & Lacrosse, 1975) and ; the participants' perception of the therapy sessions as measured by the Session Evaluation Questionnaire (SEQ) (Stiles & Snow, 1984).

A repeated measures Analysis of Variance (ANOVA) revealed that both modes of delivery (face-to-face and chat-room) had equally decreased state anxiety after the therapy session for both groups. There was no difference between either group's assessment of their counselors. The face-to-face participants rated their therapy session higher on the arousal scale of the SEQ, but not on the other scales of this measure (depth, smoothness and positivity). The difference in levels of arousal was attributed to the face-to-face participants' proximity to their counselors. The authors concluded that their results indicate that a single session of computer-mediated therapy (in a chat environment) is an effective way of alleviating anxiety. They also stated that more research is needed to investigate the reactions of different ethnic and socioeconomic groups to computer mediated therapy. Cohen and Kerr's

(1998) study provides valuable information about the effectiveness of chat-therapy, how chat-therapy compares with face-to-face therapy and the participants' perceptions of counselors in a chat environment. However their results were based on the provision of one therapy session. Research that observed the effectiveness of chat therapy over a number of sessions would be a worthwhile extension of Cohen and Kerr's work as it would more clearly highlight the effects of on-line therapy on a problem.

Conclusion

Research into Internet therapy is slowly growing. Most of the research produced concerns the delivery of therapy via email, bulletin boards and on-line support groups. There is comparatively little research produced about chat therapy. The early studies on chat therapy reported results descriptively or anecdotally and concerned group therapy in chat rooms (i.e. Philips, 1996; Sander, 1996). A more recent study (Barak & Wander-Schwartz ,2000) also focused on group work, however the results of this empirical study were inconclusive. Based on feedback from their participants Barak and Wander-Schwartz (2000) and Phillips (1996) suggested that chat-therapy has the potential to be an effective form of intervention. Cohen and Kerr's (1998) study (which focused on the delivery of chat therapy to individuals) did produce statistically significant improvements in participants' anxiety levels after the delivery of intervention (in both face-to-face and chat environment groups). No difference was found between the groups. However the fact that their results were based on one therapy session makes it difficult to clearly attribute reduction in participant anxiety levels to the interventions. Clinical research suggests that more than one session of therapy is needed to positively affect anxiety disorders (Turner, Calhoun & Adams, 1992). Therefore research that extended Cohen and Kerr's work

to investigate the effectiveness of more than one session of therapy would be a positive contribution to the literature on chat therapy. As discussed before the potential risks posed by the chat medium suggest the need for clear guidelines for researchers that would help reduce risks and maintain control of the experimental environment. Conducting single participant studies might reduce the chances of misunderstandings caused by time lag and lack of visual and auditory cues, as researchers would only be focusing on one participant. Single participant studies provide the controlled environments necessary to investigate detailed changes in individuals' behavior. Effective analysis of an individuals' behavior might provide information about subtle processes involved in chat-based therapy that might be overlooked in larger studies.

References

Australian Psychological Society (1999). Considerations for Psychologists Providing Services on the Internet [on-line]. Available WWW: http://www.psychsociety.com.au/about/internetethics.htm [2001, April 23].

Barak, A. (1999). Psychological Applications on the Internet: A Discipline on the Threshold of a New Millennium [On-line]. Available WWW: http://construct.haifa.ac.il/~azy/app-r.htm [2001, April 23].

Barak, A. & Lacrosse, (1975). Multidimensional perception of counsellor behavior. Journal of Counseling Psychology, 22, 471-476.

Barak, A. & Wander-Schwartz (2000). Empirical evaluation of brief group therapy through an internet chat room. Journal of Virtual Environments, 5(1) [On-Line Serial]. Available WWW: http://brandeis.edu/pubs/jove/ [2001, March 22].

Bloom, J. W. (1998). The ethical practice of WebCounseling. British Journal of Guidance and counseling, 26 (1), 53-59.

Childress, C. (1999). Potential Risks and Benefits of Online Psychotherapeutic Interventions. In International Society for Mental Health Online [on-line]. Available WWW: http://www.ismho.org/issues/9801.htm [2000, December, 12].

Cohen, G. E. & Kerr, B. A. (1998). Computer-mediated counseling: An empirical study of a new mental health treatment. Computers in Human Services, 15(4), 13-26.

Cutter, F. (1996). Self help software on the Web. Psychnews International 1 (4) [On-line Serial]. Available WWW: http://www.ex.ac.uk/cimh/cutter.htm [1999, December 15].

EHealth, (2000). Ehealth code of ethics [On-line]. Available WWW: http://www.ihealthcoalition.org/ethics/ehcode.html [2001, January 14].

Flemming, P. J. (1990). Software and sympathy: Therapeutic interaction with the computer. In G. Gumpert & S.L. Fish (Eds.) Talking to strangers: Mediated therapeutic communication (pp. 170-183). Norwood, NJ: Ablex.

Goffman, E. (1974). Frame Analysis: An Essay on the Organisation of Experience. New York: Harper & Row.

Greist, J. H., & Klien, M. H. (1980). Computer programs for patients, clinicians and rese. chers in psychiatry. In J.D. Didowsky, J.H. Johnson & T.A. Williams (Eds). Technology in Mental Health Care Delivery Systems. Norwood, NJ: Ablex.

Grohol, J. M. (1999). Brief introduction. In Using the Internet for Changes: Online Psychotherapy and Education, 1998 APA Convention-Devision 46 (media) [On-line]. Available WWW: http://www.cmhc.com/apa/ [1999, June 23].

Hellerstein, L. (1990). Electronic advice columns: Humanizing the machine. In G. Gumpert & S. L. Fish (Eds.). Talking to Strangers: Mediated Therapeutic Communication (pp. 112-127). Norwood, NJ: Ablex.

Hitlab Research, (1999). Desensitisation in Virtual Environements [On-line). Available WWW: http://www.hitl.washington.edu/projects/exposure/ [1999, December 13].

International Society for Mental Health Online, (2000). ISMHO/PSI Suggested Principles for the Online Provision of Mental Health Services [version 3.11] [On-line]. Available WWW: http://www.ismho.org/suggestions.html [2001, January 30].

King, L. A. (2001). The health benefits of writing about life goals. Personality and Social Psychology Bulletin, 27, 798-807.

King , S. M. (1995). Using the Internet to assist disaster mental health efforts [On-line]. Available WWW: http:www.concentric.net/~Astorm/suicide.html [1999, June 6].

King, S. M., Engi, S. & Poulos, S. T. (1998). Using the internet to assist family therapy. British Journal of Guidance and Counseling. 26 (1) 43-51.

King, S. M. & Poulos, S. T. (1998). Using the Internet to treat generalized social phobia and avoidant personality disorder. CyberPsychology and Behavior. 1(1), 29-36.

Kwon, S. (1999). Levels of abstraction and limits of the Internet; thinking about the unthinkable. Psychnews International - An Online Publication. [On-line] Available WWW: http://userpage.fu-berlin.de/~expert/ftp_4_1B.htm [1999, December 13].

Lange, A., Schreiken, B., Van de Ven, J-P., Bredeweg, B., & Emmelkamp, P.M.G. (2000). "Interapy": The effects of a short protocolled treatment of post-traumatic stress and pathalogical grief through the Internet. Behavioral and Cognitive Psychotherapy, 28, 175-192.

Laszlo, J. V., Esterman, G. & Zabko, S. (1999). Therapy over the Interent? Theory, research and finances. CyberPsychology and Behavior, 2(4), 293-307.

Lucas, R. W., Mullins, P. J., Luna, C. B. & McInroy, D. C. (1977). Psychiatrists and computer as interrogators of patients with alcohol-related illness: A comparison. British Journal of Psychiatry, 131, 160-167.

McKenna, K. Y. A. & Bargh, J. A. (1998). Coming out in the age of the Internet: Identity 'demarginalization' through virtual group participation. Journal of Personality and Social Psychology, 75(3), 681-694.

Mickelson, K. D. (1997). Seeking social support: Parents in electronic support groups. In S. Kielser (Ed.), <u>Culture of the Internet</u> (pp. 157-178). Mahwah, NJ: Lawrence Erlbaum Associates.

Miller, H. (1996). <u>The Presentation of Self in Electronic Life: Goffman on the Internet.</u> [On-line]. Available WWW: http://ntu.ac.uk/soc/psych/miller/goffman.htm [1999, December 13].

Miller, J. K. & Gergen, K. J. (1998). Life on the line: The therapeutic potentials of computer mediated conversation. <u>Journal of Marital and Family Therapy,</u> <u>24</u>(2), 189-202.

Mitchell, D. L. & Murphy, L. J. (1998a). When writing helps to heal: email as therapy. <u>British Journal of Guidance and Counseling. 26</u>(1): 21-32.

Mitchell, D. M, & Murphy, L. J. (1998b). Confronting the challenges of therapy online: A pilot project. <u>Proceedings, International Conference on Information Technology and Community Health</u>, November 1-4, Victoria, B.C., Canada, pp. 5-10 to 5-14.

National Board for Certified Counselors, (1998). <u>Standard for the Ethical Practice of WebCounseling</u>. [On-line] Available WWW: http://www.nbcc.org/ethics/wcstandars.htm [1999, December 13].

Pauk, W. (1993). How to Study in College (5th edition), Boston : Houghton Mifflin.

Pennebaker, J. W. & Seagal, J. D. (1999). Forming the story: the benefits of narrative. <u>Journal of Clinical Psychology, 55</u>. 1243-1254.

Phillips, W. (1996). <u>A comparison of Online, E-mail and In-person Self-help Groups Using Adult children of Alcoholics as a Model</u> [On-line]. Available WWW: http://www.rider.edu/users/suler/psycyber/acoa.html [1999, March 21].

Plaut, M. S. (1997). Online ethics: Social contracts in the virtual community. Journal of Sex Education and Therapy, 22(1), 84-91.

Salem, D. A., Bogar, G. A., & Reid, C. (1997). Mutual help goes on-line. Journal of Community Psychology, 25, 189-207.

Sampson, J. P. J. (1998). The Internet as a potential for social change. In L. Courtland & G.R.Waiz (Eds), Social action: A mandate for counselors. USA: American Counseling Association.

Sander, F. M. (1996). Couples group therapy conducted via computer mediated communication: A preliminary case study. Computers in Human Behavior, 12(2), 301-312.

Sanders, P. & Rosenfield, M. (1998). Counseling at a distance: Challenges and new initiatives. British Journal of Guidance and Counseling. 26(1): 5-10.

Segall, R. (2000). Online shrinks: the inside story. Psychology Today. May/June.38-43.

Spielberger, C. D. (1977). State-Trait Anxiety Inventory. California: Mind Garden.

Stein, D. J. (1997). Psychiatry on the Internet: Survey of an OCD mailing list, Psychiatric Bulletin, 21, 95-98.

Stiles, W. B. & Snow, (1984). Counseling session impact as viewed by novice counselors and their clients. Journal of Counseling Psychology, 31, 3-12.

Stofle, G. S. (1997). Thoughts About Online Psychotherapy: Ethical and Practical Considerations. Face-to-Face Counseling and Online Education and Counseling [On-line]. Available WWW: http://members.aol.com/stofle/onlinepsych.htm [1999, August 23].

Stricker, G. (1996). Psychotherapy and Cyberspace. Ethics and Behavior, 6(2), 175-177.

Stroem, L., Pettersson, R., Andersson, G. (2000). A controlled trial of self-help treatment of recurrent headache conducted via the Intercnt. Journal of Clinical and Consulting Psychology, 68(4), 722-727.

Suler, J. (1996). Transient and Long Term Online Relationships. In Psychology of Cyberspace [On-line]. Available WWW: http://www.rider.edu/users/suler/psycyber/relationships.html [1999, December 13].

Suler, J. (1997a). The Final Showdown Between In-Person and Cyberspace Relationships or Can I Hold You in Cyberspace [On-line]. Available WWW: http://www.rider.edu/users/suler/psycyber/showdown.html [1999, December 13].

Suler, J. (1997b). Psychological Dynamics of Online Synchronous Conversations in Text-Driven Chat Environments [On-line]. Available WWW: http://www.rider.edu/users/suler/psycyber/texttalk.html [1999, December 13].

Suler, J. (1998). Online Psychotherapy and Counseling [On-line]. Available WWW: http//www.rider.edu/users/suler/psycyber/therapy.html [1999, December 13].

Suler, J. (1999). The basic psychological features of E-Mail communication. Self–Help and Psychology Magazine [On-line]. Available WWW: http://www.shpm.com/articles/internet/features.html [1999, December 13].

Suler, J. (2001). Psychotherapy in Cyberspace [On-line]. Available WWW: http://www.rider.edu/users/suler/psycyber/therapy.html [2001, January 13].

Turner, S. M., Calhoun, K. S. & Adams, H. E. (Eds.) (1992). Handbook of clinical behavior therapy. (2nd ed.). U.S.A.: John Wiley & Sons.

Uecker, K. E. (1997). Psychodynamic considerations of online counseling.

Perspectives. A Mental Health Magazine. January-Febuary, 1997 [On-line]. Available

WWW: http://www.cmhc.com/perspectives/articles/art0971.htm [1999, August 30].

Wallace, P. (1999). The Psychology of the Internet. Cambridge University

Press: Cambridge.

Wired News, 2000. Online Therapy isn't Shrinking [On-line]. Available

WWW: http://wired.com/news/culture/0,1284,36584,00.html [2000, November 11].

Young, K. S. & Suler, J. (1998). Interventions for deviant and pathalogical

behavior in an online community. In Using the Internet for Changes: Online

Psychotherapy and Education, 1998 APA Convention-Devision 46 (media) [On-line].

Available WWW: http://www.cmhc.com/apa/ [1999, December 13].

Paper 2

Running Head: EFFECT OF ON-LINE CBT ON STUDY BEHAVIOR AND ANXIETY

Effects of synchronous chat-based on-line cognitive behavior therapy on study-related
behavior and anxiety

Anoushka Rassau

Edith Cowan University, Perth, Australia

Abstract

In order to investigate the effectiveness of on-line therapy, two single-subject studies that delivered Cognitive Behavior Therapy via a chat room to undergraduate volunteers were undertaken. Study 1 (n=3, 2 female, 1 male), aimed to reduce study-related anxiety. Study 1 was a multiple baseline study, across participants. Missing data produced inconclusive results. Study 2 (n=1, female), aimed to increase three study behaviors that were identified as inadequate, and reduce study-related anxiety. Study 2 was a multiple baseline study across behaviors, with changing criterion for two behaviors. The study behaviors targeted were; hours of study, number of pages read and quality of note taking. The measures used were the participant's daily self-recordings of anxiety and study behavior levels. The results showed increases in the participant's study behaviors during on-line therapy. A reduction in the participant's anxiety levels was also evident. Further research that would use diverse populations and compare on-line therapy with traditional forms of therapy is recommended.

The effects of synchronous chat-based on-line cognitive behavior therapy on study-related

behavior and anxiety

As the worldwide use of the Internet increases, therapists have discovered that

they are able to provide services to people through this medium (Segall, 2000; Uecker,

1997). The most common mode of Internet communication is email. While email allows

clients and therapists to exchange messages regardless of time and geographical location,

it lacks the spontaneity and immediacy that can be experienced in Internet chat

environments. To date the use of an Internet chat environment as a potential therapy

medium in areas such as marriage therapy, anxiety problems and group work has

indicated the medium's potential to be successful (Barak & Wander-Schwartz, 2000;

Cohen and Kerr, 1998; Sander, 1996). Chat based on-line therapy involves the client and

therapist using synchronous text messages to communicate in a private Internet chat

environment.

Although Internet chat environments have been used in therapy by a small number

of researchers (Barak & Wander-Schwartz, 2000; Cohen & Kerr, 1998; Sander, 1996), the

data collected has been limited by participant selection, reliability of measures and the

number of therapy sessions used. The early studies on chat therapy reported results

descriptively or anecdotally and concerned group therapy in chat rooms (i.e. Philips,

1996; Sander, 1996). A more recent study (Barak & Wander-Schwartz ,2000) also

focused on group work, however the results of this empirical study were inconclusive.

Based on feedback from their participants Barak and Wander-Schwartz (2000) and

Phillips (1996) suggested that chat-therapy has the potential to be an effective form of

intervention. Cohen and Kerr's (1998) study (which focused on the delivery of chat

therapy to individuals) did produce statistically significant improvements in participants'

anxiety levels after the delivery of intervention. However the fact that their results were

based on one therapy session, makes it difficult to clearly attribute reduction in participant anxiety levels to the chat based intervention. Clinical research suggests that more than one session of therapy is needed to positively affect anxiety disorders (Turner, Calhoun & Adams, 1992).

These limitations have emphasized the need to conduct a study that more clearly reveals the effects of chat-based therapy on a problematic psychological or behavioral condition using more controlled methodological techniques. The purpose of the studies reported in this paper is to examine the effects of Cognitive Behavior Therapy provided in a chat-based Internet environment on study-related anxiety and study behavior. These studies address the limitations of previous research by selecting participants from a population that would benefit from chat-based therapy and maintaining experimental control over a series of chat-based therapy sessions.

University students are a population that could benefit from chat-based therapy as they have ready access to computing facilities and are in an environment that is conducive to stress related disorders such as study-related anxiety (Abouserie, 1994). Certain student populations (external students and students with disabilities) might also have less access to traditional therapy facilities than others (Bloom, 1988).

Cognitive Behavior Therapy (CBT) based anxiety management training has been shown to reduce student anxiety (Collins, 1999; Deffenbacher & Michaels, 1981; Vance & Watson, 1994). These researchers used anxiety management training techniques (such as relaxation, cognitive restructuring and coping skills) in traditional face-to-face settings to successfully reduce study-related anxiety in secondary and university students. Although CBT has been suggested to be an appropriate technique for distance counseling (Rosenfield, 1997) and also to suit text-based Internet communication (Suler, 1998;

Uecker, 1997), to date there has been no research that examines the effects of CBT based techniques when they are provided through an Internet chat environment.

While the benefits of providing chat-based therapy to certain population groups is evident (Childress, 1999; MaKenna & Borgh, 1998), the potential risks posed by the medium suggest the need for guidelines for researchers that would help reduce risks and maintain control of the experimental environment (Childress, 1999). For instance, the lack of visual and auditory cues suggests that there may be room for misunderstanding if both parties are not careful to use appropriate symbols or punctuation to make themselves clear (Suler, 1997b). Additionally, the time lag created when waiting for one person to type sometimes leaves the other person uncertain about when to send his/her response. In order for one person to express a complex idea, a chat partner may have to refrain from responding and 'listen' to what the other person has to say (Suler, 1997b).

These potential problems provided ideas for suitable methodology for this research. A single participant experimental design has been designed in order to help maintain control of the intervention by reducing the chances of misunderstanding caused by the lack of visual and auditory cues. With only a single participant to concentrate on at a time it was hoped that the researcher would also be better able to handle any problems arising due to time lag between replies. A multiple baseline study was undertaken to provide a clearer evaluation of the effects of the intervention on the problem, thereby determining therapy effectiveness. This research aimed to examine the effects of a sequence of chat-based CBT sessions on self-monitored study-related anxiety and study behavior.

Study 1

The aim of Study 1 was to examine the effects of a CBT based intervention provided via a synchronous chat-based Internet environment on self-monitored study anxiety.

Method

Setting

The therapy sessions took place on the virtual campus of a metropolitan Australian university. The university provides students and staff with the opportunity to conduct some classes in a chat-based Internet environment. The on-line therapy sessions for this study were carried out in a tutorial 'room' in this environment. Although the tutorial room was accessible by any student at any time, it is possible to hold private conversations with a person by 'double clicking' on his/her name to create a private room. Participants accessed the chat site from their homes or student laboratories and the researcher from a postgraduate research laboratory in the university. The researcher and participants met in this Internet environment once a week at an agreed time for approximately 1-1 ½ hours. Participants were provided with instructions on how to access this service (see Appendix A).

Participants

Initially seven, first year full-time undergraduate students volunteered in response to flyers advertising the study (these were distributed through the postal mail and posted on the Internet on a student bulletin) (see Appendix B). Five participants who met the selection criteria were chosen for the study. Each of the volunteers was provided with four screening measures. They were also provided with an information sheet that explained the purpose of the screening forms (see Appendix F). These were sent via the mail along with

pre-paid envelopes in which to return the completed forms. The five selected participants met the following predetermined selection criteria on the four screening measures. (1) Questions relating to comfort with using the internet and computers (compiled by the researcher) (Appendix E); Participants must type their own assignments, have an email account which they check more than 3 times a week, and use the Internet for more than just checking email (In order to establish a reasonable familiarity with computers and the Internet). (2) State Trait Anxiety Inventory (STAI) (Spielberger, 1977); scores above the norms for college students on the Trait scale (38.3 for males, 40.40 for females). (3) Stress Vulnerability Questionnaire (Miller & Smith, 1998) (Appendix C); A score of 50 or above as this indicates a vulnerability to stress. (4) Test Anxiety Questionnaire (Nist & Diehl, 1990) (Appendix D); A score of above 35 as this indicates an unhealthy level of test anxiety.

Each participant was required to sign a consent form by which they allowed the results of the study to be reported (see Appendix L). Two female participants dropped out at the start of the study. One stated that she did not have the time to commit to the study, the other had to move overseas and did not want to be involved in the study. This left three participants (one male and two females) which was the minimum requirement for a multiple baseline study. These three participants and their screening results are described below.

Participant 1 was a 33-year-old male student who was married. His responses to the questions relating to comfort with using the Internet (Appendix E) indicated that he had reasonable familiarity with the medium. His trait anxiety score was 44, which is higher than that expected of a male college student. His stress vulnerability score was 50 indicating that he was vulnerable to stress. His test anxiety score was 35 indicating that he was prone to some test anxiety.

Participant 2 was a 31-year-old female who was married. Her responses indicated that she too was reasonably familiar with computers and the Internet. Her trait anxiety score was 58, which is much higher than the average expected for a female college student. Her stress vulnerability score was 52 and her test anxiety score was 36, indicating a vulnerability to stress and test anxiety.

Participant 3 was a 31-year-old female student who was also married. She too was familiar with the Internet and computers according to her responses. Her trait anxiety score was 58, which is much higher than that expected for a female college student. Her stress vulnerability score was 52 and her test anxiety score was 37, indicating a vulnerability to stress and test anxiety.

<u>Measures</u>

The five dependent measures used in the study are described below. All measures were provided to participants via the postal mail. Participants were instructed to return completed forms in the reply paid envelopes provided.

(1) Average daily anxiety and study behavior levels: A form on which participants recorded their daily anxiety levels and study behavior was provided to the participants (compiled by the principal researcher) (see Appendix I). Participants recorded the amount of time they spent on study behavior at the end of each day. They also recorded the levels of anxiety they experienced (rated on a scale of 1-10), during specific periods throughout each day of the study (9am-12 noon, 12 noon-3pm, 3pm-6pm, 6pm-9pm and 9pm to 12midnight). A rating of 1-3 was regarded as low anxiety, 4-7 regarded as moderate anxiety and 8-10 regarded as high anxiety. Average daily anxiety levels were calculated from this data by the researcher. The participants were provided with new forms in the mail every week.

(2) State-Trait Anxiety Inventory (STAI) (Spielberger, 1977): The State-Anxiety scale was administered to participants fortnightly during the study as another anxiety measure. The Trait-Anxiety scale was administered as a measure of trait anxiety during baseline and after the on-line therapy phase so that comparisons could be made.

(3) Weekly study anxiety rating: A monitoring form for participants (Sarason & Sarason, 1991) (see Appendix G) and corresponding monitoring form for an independent assessor (see Appendix H) were provided. Each participant was instructed to have a friend or family member monitor his/her study anxiety levels as exhibited in conversation each week. This independent assessor was instructed to estimate how many times he/she heard the participant make anxious statements about study each week (see Appendix H). The participants used a similar scale (see Appendix G). A total of 50 points was obtainable. A rating of 0-9 was taken to indicate very low study anxiety, 10-19 was taken to indicate low study anxiety, 20-29 was taken to indicate moderate study anxiety, 30-39 was taken to indicate high study anxiety and 40-50 very high study anxiety. Both the participants and independent assessors were instructed to keep a record of relevant statements and to complete their respective forms at their homes on the Friday of each week. The independent assessors served as external checks of the reliability of the participants' self-monitoring. The form was returned to the researcher by the mail. These forms were more specific measures of study-related anxiety, while the STAI is a measure of general anxiety levels. Each independent assessor filled out a confidentiality form (Appendix M). These were also returned to the researcher via the mail.

(4) In order to investigate the topics discussed during the counseling sessions, categorical content analysis was carried out on the session transcripts after the completion of the study. As described in Sarantakos (1998) categories of topics that indicate study anxiety were derived. Based on experience with the participants during on-line therapy, the

researcher constructed categories of conversation topics that arose during the on-line sessions. As a test of reliability three independent counselors were asked to list categories of conversation that may arise during a therapy session about study-related anxiety. Categories on which all three counselors and the researcher agreed upon were chosen to help analyze the session transcripts. One counselor assisted the researcher in using latent coding to place statements made by participants in the sessions into the chosen categories. This involved studying the content of participants' phrases and placing them in the chosen categories. Phrases that were placed in one category were not placed in another. These categories were defined as follows.

Extreme workload: This category pertains to those sentences in the transcripts that mention impending due dates, attempts at time management, making/having/keeping to a study plan, organizing life around that study plan. For example; "I have two assignments due next month" or "I've been trying to find time to keep surfing while I study for exams and work."

Distraction from study plan: Those sentences in the transcript that refer to procrastination or distraction from a study plan due to interactions with friends and family or other commitments. For example; "I didn't have time to finish reading a chapter last night as I decided to go to a movie with friends". Or "I had to spend the weekend helping my sister plan her wedding and could not prepare for the test on Monday". Or "I spent the weekend working in the garden instead of studying".

Physical symptoms of anxiety: References to tension in the body, headaches, heart palpitations, sleep problems or changes in sleeping patterns or how these may interfere with study. For example; "I have had difficulty sleeping over the last few weeks" or "By midnight I have developed a headache and have not been able to study anymore".

Psychological symptoms of anxiety: This includes depression about workload, concern with own ability to cope with study, concern about grades/achievement, comparing performance to others, mention of others or own expectations. For example; "I wish I could remember what I read. My friend seems to be able to remember things more easily" or "my lecturer will be disappointed if I fail this course again" or "I don't think I am capable of achieving the grade I want".

External variables: This includes mention of relationship problems, family problems, employment or financial problems. For example; "I am trying to reconcile my relationship with my husband" or "I am struggling to make ends meet while I study, as I have not been able to find work".

The transcripts were read and the dialogues coded according to the categories above. Inter-observer agreement of 86% was achieved between both observers (i.e. the second observer agreed with 86% of the codings made by the first observer).

Design and Procedure

Design. A multiple baseline across three participants was used.

Baseline. During this period the participants were instructed to start recording their anxiety levels and study behavior using the daily recording forms (Appendix I). This continued throughout the on-line therapy period. Participants also completed the Coping Scales for Adults (CSA), (Frydenberg & Lewis, 1996). This was administered to determine the participants' existing coping methods for handling stress in order to identify problematic coping strategies. Results of the CSA were provided to clients at the second on-line therapy session. The first fortnightly STAI state-anxiety measurement was taken during baseline. The independent assessors and participants made their first weekly estimate of the participants' study anxiety levels during this phase. Participant 1, Participant 2 and Participant 3 entered the baseline period a few days apart. Participant 1

had a base line of four days, Participant 2 of five days and Participant 3 of 14 days, after which they each had their first weekly on-line therapy session.

On-line CBT. This phase consisted of eight on-line therapy sessions. The eight sessions consisted of the Anxiety Management Training program outlined by Kennerley (1995). Beck (1995) and Davis, Eshelman and Mckay (1995) were used to supplement Kennerley, (1995). Cognitive Behavior Therapy (CBT) formed the basis of the Anxiety Management Training. Therefore while Kennerley (1995) was used to structure the overall content of the therapy sessions, Beck (1995) and Davis, Eshelman and Mckay, (1995) were used to explain basic concepts of CBT to the participants. During the on-line therapy phase the STAI state-anxiety scale was administered fortnightly. The independent assessors and participants rated the participants' study anxiety levels weekly during this phase. The content of each on-line therapy session is outlined below.

Session 1 was an introductory session. The participant was thanked for being on time for the session and inquiries were made as to whether he/she had any problems logging on to the computer network. The participant was informed of the steps that he/she was to take in case of connection failure. This involved trying the connection after a 5-10 minute period and telephoning the researcher if unsuccessful, to reschedule appointments. The participant was provided with a number of a crisis center for emergencies that may have arisen during the week (see Appendix A). The participant was informed that the researcher would check her email account every day for any messages he/she may have left regarding rescheduling an appointment or any questions that arise. This session familiarized the participant with cognitive therapy by informing them about anxiety and the therapy process. The researcher also normalized the participant's difficulties stating that study anxiety was common to university students. The participant's expectation for

therapy was also ascertained (Beck, 1995). During this first session the following information was also gathered.

Background information about the participant, such as age, marital status, living arrangements, social support network, occupations, family of origin and leisure interests was collected. A brief account of the main problem and its impact was gained in order to obtain a general overview of problems. A mood check was performed by asking the client how he/she felt (e.g. depressed, anxious, happy). A history of the main problem, the life events associated with it was obtained. A brief history of significant medical and psychiatric treatment (if any) was also obtained. The participant's response to previous therapy/treatments/ counseling and his/her understanding of and motivation for this present form of therapy was assessed. The approach of Cognitive Behavior Therapy was explained (Beck, 1995; Davis, Eshelman & Mckay, 1995) as it formed the basis of the Anxiety Management Training. A more detailed account of the problem for which the participant was seeking help in terms of its future implications, frequency, duration and situational specificity was gained. The participant was asked to monitor thoughts when he/she feels anxious throughout the period of the study. The participant was asked if he or she experienced suicidal thoughts. A summary of the session was then provided. The participant was informed that because there is no way of judging facial expressions through this medium it is important that the researcher be informed if she said something that may have made the participant uncomfortable. Finally the participant was encouraged to provide feedback about the session.

In Session 2 the participant was introduced to relaxation techniques. The participant was also provided feed-back from the CSA and baseline anxiety measurement data and the findings were discussed. A progressive muscle relaxation tape was provided to the client via the mail (Commonwealth of Australia, 1993). The client was informed

about the role of progressive muscle relaxation in reducing anxiety as described in Davis et al (1995). Visualization and deep breathing were similarly outlined for the participant. The techniques that may best suit the participant were discussed. The participant was instructed to try the chosen method (s) during the week that followed.

In Session 3 automatic thoughts were addressed. The participant's experience with the attempted relaxation techniques was discussed. The nature of positive and negative automatic thoughts and their effects on people were also discussed. The Antecedent-Behavior- Consequence model of behavior and core beliefs (and challenging them) was described (Beck 1995). Examples were derived from the client's life in order to highlight these concepts. The participant was instructed to track his/her negative thoughts and challenge them during the week.

Session 4 was focused on modifying core beliefs (Beck, 1995). The following techniques, which are used to challenge and modify core beliefs, were described to the client; using extreme contrasts, developing metaphors, historical tests for core beliefs, restructuring early memories and role-playing a traumatic event. Examples from the participant's life were used to illustrate these models.

Session 5 involved discussing the particular aspects of study that made the participant anxious and how the tools discussed earlier can help alleviate the problem. The roles of other areas in the person's life that add to academic anxiety were also discussed.

Sessions 6 and 7 included discussing the progress made with the relaxation and cognitive exercises and dealing with any problems the participant encountered.

Session 8 involved recapping previous sessions and closure. Arrangements were made for future contact if necessary.

Results

Due to a large amount of missing data, the results of study 1 are inconclusive. The available data are described below.

Figure 1 shows the average daily anxiety levels for the participants over the course of the study. During baseline, Participant 1 displayed low variability at an average of 4 with no indication of trend. Participant 2's baseline showed a decreasing trend from a level of 7 to a level of 2. Participant 3 displayed high variability during baseline around an average of 5.1 with no trend. During on-line therapy, Participant 1 exhibited an initial decrease in anxiety but with an increasing trend back into baseline levels, followed by a decreasing trend until Day 34. From day 34 onwards anxiety levels for this participant were all below baseline. The average anxiety level during the last 12 days for Participant 1 was 2.3. For Participant 2, the decreasing trend evident in baseline is maintained for the first two days of on-line therapy, after which no data is available until Day 43, revealing some variability around an average of 4 with an increasing trend back to baseline levels. There were no data available at the start of on-line therapy for Participant 3 until Day 21. From Day 21 to Day 34 there was high variability fluctuating at or below baseline at an average of 3.2. After this period there were no data until Day 42 at which time anxiety was at a level of 7 with a clear decreasing trend and anxiety remaining at baseline levels. Due dates for assignments are also indicated on Figure 1 by asterisks.

Table 1 shows the participants' STAI-state anxiety scores taken fortnightly during the study. The times at which each of these measurements were taken are indicated on Figure 1 (T1 –T4). During baseline (T1) Participant 1's score was within the average range for male college students. Participant 2's baseline score was significantly (+2sd) higher than the average range for female college students. Participant 3's baseline score was within the average range for female college students. By the next fortnight (T2)

(during on-line therapy) Participant 1's score increased greatly after which it decreased to baseline levels at T3 and T4. The increase at T2 for Participant 1 corresponds with increases in anxiety levels for this participant on Day 11 (see Figure 1) when an assignment was due. The subsequent decreases at T3 and T4 correspond with a decreasing trend in anxiety evident in Figure 1 from Day 23 onwards for this participant. Participant 2's second fortnightly score (T2) remained as high as her baseline score after which it decreased to average state-anxiety levels at T3 and T4. Participant 3's scores remained unchanged at average state-anxiety levels from T2 to T4.

Table 1 also shows the pre and post test results of the participants' STAI trait-anxiety scores. During the pre-therapy period Participant 1's trait anxiety score was within the average range for male college students. Participant 2's pre-therapy score was at the higher end of the average range of scores for female college students as was Participant 3's pre-therapy results. Participant 1's post-therapy result was within the range of his pre-therapy score. Participant 2 exhibited similar results. There is no post-therapy trait anxiety score available for Participant 3.

Table 2 shows the results of content analysis carried out on the participants' session transcripts. Content analysis reveals that Participant 2 and Participant 3 made more statements relating to non-study-related issues than Participant 1. Participant 1 remained focused on study-related factors. An interrater agreement of 86% was achieved during the coding used for content analysis.

Figure 2 shows the study anxiety measurements of the participants plotted against those of the independent assessor. The independent assessors' ratings generally corresponded with the participants' ratings though the participant's ratings were mostly higher. Participant 1 showed a decrease after baseline with a decreasing trend during therapy. His independent assessor showed a corresponding decrease after baseline as well

as the decreasing trend. This corresponds with the overall trend in anxiety for Participant 1 evident in Figure 1. There were no baseline data available for Participant 2. The therapy period for Participant 2 revealed variable yet corresponding scores between Participant 2 and her independent assessor. Participant 3 showed an initial increase during therapy compared to baseline followed by a decreasing trend to below baseline levels. Her independent assessor did not show decreases in anxiety.

Figure 3 shows the hours spent per day on study behavior by each participant. During baseline, Participant 1 displayed variable study behavior at an average of 1.8 hours per day with an increase at the end. Participant 2 showed a dramatic decrease during baseline from an average of 6.3 during the first three days to 0 for Days 4 and 5. This decrease corresponds with the decrease in her anxiety levels at this time (see Figure 1). During baseline Participant 3 exhibited variable study behavior around an average of 2 hours per day with no trend. During on-line therapy, Participant 1 exhibited variable levels of study behavior that were higher than baseline levels at an average of 7.6 hours per day, until Day 16. After Day 16 there was a sharp decline in study behavior to baseline levels that were highly variable at an average of 4 until the end of the study. There was no study behavior exhibited by Participant 2 during the start of on-line therapy and no other data available for this client after Day 7. There were no data available for Participant 3 at the start of on-line therapy. Data were available from day 21 to day 36 and was highly variable at an average of 2.6 showing no clear difference in study behaviors from baseline.

Discussion

The results of study 1 did not provide evidence that a CBT based anxiety management intervention provided through a synchronous chat-based environment on the Internet, was successful in reducing study-related anxiety. Only Participant 1 exhibited

treatment gains over the course of the intervention period. Missing data and insufficient results made it impossible to make any conclusion about the effect of intervention on Participants 2 and 3.

A week into the study, both Participants 2 and 3 experienced major disruptions in their marital relationships. As a result for several weeks they were unable to complete the self-monitoring forms resulting in missing data. Participant 2 also reduced most of her academic work load toward the end of her baseline period which in turn decreased her anxiety levels, making it impossible to determine if decreased anxiety levels were due to the intervention or the removal of anxiety causing stimuli (academic workload). Participant 1's study anxiety was not complicated by other sources of anxiety. Evidence for this is presented by the content analysis of the session transcripts. Content analysis of Participant 1's session transcripts revealed that the focus of sessions was mainly study-related problems. Content analysis of the transcripts for Participants 2 and 3 revealed that the presenting problem (study-related anxiety) was not the focus of most of the therapy sessions. The intervention for this study was designed to target study-related anxiety. Study anxiety was either a minor or just a partial contributor to the anxiety levels of Participants 2 and 3. This may explain why the intervention was not as effective for these participants, while a reduction in Participant 1's anxiety levels is evident by the end of intervention. More stringent screening would be needed to ensure that the selected participants would benefit from similar studies. A longer baseline may have helped reveal existing patterns of anxiety more clearly for all participants and changes during intervention may have been more evident.

The participant whose data revealed the most gains was Participant 1. This participant's pre-treatment screening and baseline anxiety levels were lower than the other participants' levels. The results for this participant indicate a drop in anxiety levels at the

start of intervention followed by an increase and a gradual decline over the rest of the study. The delay in treatment gains may have been due to the time needed to master the relaxation and cognitive skills discussed during the sessions. It is also possible that while the relaxation and cognitive skills provided the participant with the means of dealing with the symptoms of anxiety, they did not target the maintaining conditions, which may have been more apparent at the start of intervention for Participant 1. Targeting the conditions more closely related to the participant's study anxiety as opposed to its symptoms, may have provided more immediate results. Bailey, Onwuegbuzie and Daley (2000) found that students with higher anxiety tended to display poorer time and study management skills. Chitrangi (1995) and Petrie and Helmcamp (1998) found that targeting student's study skills actually reduced their anxiety levels. These authors provided students with study skills training (instruction on how to better organize and retain information) and found that the students experienced less anxiety than before the training. Though Participant 1 exhibited study behavior that was more consistent than Participants 2 and 3, it was still highly variable. More consistent patterns of study behavior may have resulted in lower levels of anxiety for Participant 1. An investigation into the participant's study habits may have revealed problematic patterns that could have been targeted specifically by teaching positive study habits.

Problems that reflected the characteristics of the on-line environment may have also effected the application of the intervention. During the intervention period some technological problems like disruption of Internet connections were experienced. These abrupt interruptions did lead to severing of dialogue that may have negatively affected the impact of intervention. Access to a telephone by both the therapist and the participant is necessary for contact in such a situation in order to reschedule a session or to complete a dialogue. The researcher also experienced a loss of presence when the participant was

slow to respond to questions and statements due to typing skills. As no visual cues are available in a chat-based environment, it was difficult to interpret delays in the participants' responses. Another difficulty caused by the lack of visual cues was that though the participants made good effort to clarify their expressions, at times there were no indications to mark a change in topic. It was not possible to judge when the participant wanted to change the direction in the dialogue, so any attempt to do so seemed sudden. Additionally there was no way of telling whether the participant was alone and was not distracted. There were occasions when Participants 2 and 3 were disrupted by their children. This would be unlikely to happen in an in-person-therapy situation where privacy can be better guaranteed.

For research purposes it is important that the presenting problem remain the focus of intervention in order that effectiveness of the intervention can be determined. A more stringent screening process whereby it is determined that anxiety levels experienced by participants are mainly due to the pressure of study may ensure this. Also participants with lower levels of anxiety as opposed to high levels of anxiety may be less likely to have several additional contributors to their anxiety levels. This must be considered when selecting participants. Additionally it may be necessary to decrease the number of self-monitoring forms that participants need to fill out either weekly or biweekly in order to increase the likelihood that participants meet the requirements of the study. Having the participants fill out as many forms as they did may have been too demanding for Participants 2 and 3 and may explain why they lost some of the forms.

It is not possible to determine the effectiveness of the intervention used in this study due mainly to the missing data, and though Participant 1's results show some gains, these were delayed. An intervention that targeted variables more closely related to study anxiety may be more effective for students. In order to accomplish this, study-related

behavior associated with anxiety must be identified and those areas targeted specifically. For instance poor study habits contribute to anxiety in students as they lead to poor organization of work and an inability to cover the necessary material in the available time. So targeting these areas may help reduce study anxiety further. Also targeting specific problem study areas may provide participants with more tangible gains and therefore encourage participation in the study.

In order to clearly determine the effectiveness of an intervention presented via a chat-based Internet environment, a second study was undertaken, taking into account the following factors. The participant was more thoroughly screened to determine if existing study anxiety was confounded by other sources. Problem study behaviors were determined and targeted specifically instead of symptoms of anxiety. A longer baseline for each of the behaviors was carried out in order to establish already existing patterns of study behavior in the participant. The number of self-monitoring forms required from the participant was reduced. The required contact time on the Internet was reduced to 45-60 minutes to decrease chances of experiencing a connection failure during the session time. The number of sessions was reduced from eight to six to increase the likelihood that the participant was willing the commit to the duration of the study.

Study 2

The results of Study 1 led to the conclusion that individuals with high levels of anxiety may not benefit from an intervention aimed at study-related anxiety over the Internet as their anxiety may be more directly related to non-study-related factors. Accordingly the selection criteria for this study were modified to choose a participant with lower levels of anxiety who still experienced difficulty with study. The principal researcher also interviewed the participant in order to determine that problematic study habits were the primary cause of her anxiety and that it was not confounded by anxiety

relating to other factors like relationships or past issues. Study 2 aimed to examine the

effects of CBT (via an Internet chat environment and focusing on education about study

skills), on problematic study habits and study-related anxiety.

<div align="center">Method</div>

Setting

The same as Study 1. The researcher and the participant met on the Internet once a

week at an agreed time for approximately 45 minutes. The participant was provided with

instructions on how to access this service (Appendix A).

Participant

One 22 year old, female undergraduate student participated in this study. This

participant was single and lived in shared student accommodation on campus. The

participant volunteered for the study having read a flyer (Appendix B) that offered help

over the Internet to improve study skills. She was provided with five screening forms and

an information sheet (Appendix F) that explained the use of the screening forms. The

participant filled out the screening forms in order to help identify any study habits that

were problematic and ensure that her anxiety did not exceed moderate levels. The

screening procedure is outlined below.

Screening

The information derived from screening was as follows. The participant had a Test

Anxiety score of 11 indicating low test anxiety (Nist & Diel, 1990) (see Appendix D). She

scored 40 on the Stress Vulnerability Questionnaire (Miller & Smith, 1998) indicating

that she was not vulnerable to stress at the time of administration (see Appendix C), and

her STAI-trait anxiety score was 36 (Spielberger, 1977). She also indicated a reasonable

familiarity with computers and the Internet based on her responses to questions relating to

comfort with using the Internet (compiled by the researcher; Appendix E). The Study

Habits Inventory (Cook Counseling Center, 2000; Appendix J) and an interview revealed

a regular pattern according to which the participant studied and that the main cause of her

anxiety was study-related. Her study time included the following components; reading

texts, making notes (examples were provided by the participant) and breaks.

It was also established during the interview that the participant had difficulty maintaining

a regular study period, had trouble covering the reading assigned material, and trouble

adjusting her reading speed causing some anxiety. Examination of the quality of notes she

made after reading her texts revealed that there was no recognizable system of

organization that would make easy reference and prompting of memory possible. Three

problem study behaviors (time spent studying, number of pages read and quality of note-

taking) were chosen for intervention with on-line therapy.

Dependent Variable Measures

The measures were provided to the participant through her student mail box and the

participant was asked to return them before each on-line therapy session to the researcher.

Daily levels of study behaviors. The daily levels of the three study behaviors were

recorded on a monitoring form (Appendix K). These behaviors are defined below.

a) Behavior 1 (Hours of study). This refers to the duration of the participants study

session each day. The participant was instructed to record the starting and finishing time

of her study session each day. b) Behavior 2 (Number of pages read). This refers to the

number of typed pages from a textbook (or printed from the Internet) the participant read

during the study session. Pictures and graphs were to be excluded when estimating how

many pages were read. c) Behavior 3 (Points for note-taking). This refers to the total score

the participant achieved for note-taking skills each day. Study guides for university

students often recommend certain strategies like, using abbreviations, avoiding whole

sentences and using trigger questions when taking notes (Macqueen,1998; McEvedy &

Jordan,1986; Pauk, 1993). The Cornell method incorporates many of the suggestions made in study guides. As the participant's note taking method had no clear means of organization, it was hoped that an intervention that taught her standardized note taking skills (i.e. the Cornell method) would be beneficial. The participant's notes were examined and 1 point was assigned to each feature of her daily notes that corresponded with the 13 characteristics of the Cornell criteria. The closer the participant's score was to 13, the closer she was to completely meeting the criteria (see Appendix O for a list of the criteria). Scores from 1-5 were taken to indicate low quality of notes. Scores from 6-9 were taken to indicate a moderate quality of notes. Scores from 10-13 were to indicate a high quality of notes. Before the study commenced the participant signed a consent form (Appendix L), a copy of which was provided for her.

Average daily anxiety levels and STAI trait anxiety. A form that recorded levels of daily anxiety (and the targeted study behaviors) (Appendix K) was provided to the participant for each day of the study. The participant was asked to rate her average daily anxiety at the end of each day on a scale of 1-10. A rating of 1-3 indicated low anxiety, 4-7 indicated moderate anxiety and 8-10 indicated high anxiety. The STAI trait-anxiety score was administered as a pre-intervention measure during baseline and post-intervention measure after the study.

Weekly study anxiety rating. A monitoring form for participants (Appendix G) and corresponding monitoring form for the independent assessor (Appendix H) was provided each week. The participant was instructed to have a friend or family member monitor his/her study anxiety levels as exhibited in conversation each week. This independent assessor was instructed to estimate how many times he/she heard the participant make anxious statements about study each week (see Appendix H). The participant made similar estimations (see Appendix G). The independent assessor served

as an external check of the reliability of the participant's self-monitoring. The forms were returned to the researcher by mail. The participant and the independent assessor were instructed to fill in their forms at their respective homes on the Friday of each week. A total of score of 50 points was obtainable. Scores from 40-50 indicated very high study anxiety, 30-39 indicated high anxiety, 20-29 indicated moderate anxiety, 10-19 indicated low anxiety and 0-9 indicated very low anxiety.

Content analysis. As in Study 1, content analysis was carried out on the session transcripts after the study in order to investigate the topics discussed during the on-line therapy sessions. The categories derived for Study 1 were used here too. The researcher's analysis was compared with that of another observer (a post-graduate psychology student) and interobserver agreement of 82% was achieved. The categories are listed below briefly with detailed descriptions provided in the Method section of Study 1.

Design and Procedure

Design. A single participant multiple baseline study across study behaviors with changing criterion for behaviors 1 and 2 was used.

Baseline. During this phase the participant did not meet with the researcher on the Internet. Instructions for the collection of baseline data were given verbally at the end of the screening interview when it was decided that the participant met the selection criteria. The participant was instructed to enter the baseline period during which measurements of the three targeted study behaviors commenced. This process was carried out through the study. The baseline period lasted 14 days. After this the participant and the researcher decided that the first activity to be targeted would be the duration and consistency of her study time. A STAI trait-anxiety measurement was also taken during this phase.

On-line CBT. The researcher and the participant met once a week. The sessions involved discussing baseline levels of the target behaviors and deciding what the criteria

for change should be for each behavior. The on-line sessions also involved discussing impediments to achieving the set criteria and how to overcome them. In particular the role of negative thoughts and their influence on anxiety levels was discussed. On-line therapy for Behavior 2 did not begin until criteria for Behavior 1 were met. Similarly on-line therapy for Behavior 3 did not begin until criteria for Behavior 2 were met. The content of each of the six sessions is outlined below. On Day 25 of the study the participant was shown the results of her self-monitoring in chart form to establish face validity of the results so far. Guba (1981), Guba and Lincoln (1981) and Reason and Rowan (1981) state that participant checks are an effective form of estimating validity in qualitative research. This involves giving the participants feedback about their results in order for the participants to determine if these reflect their own experience. This process was carried out again at the end of the study.

Session 1 (Day 15), was an introductory session. The participant was thanked for being on time for the session and inquiries were made into whether she had any problems logging on to the computer network. The participant was informed of the steps that he/she was to take in case of connection failure. This involved trying the connection after a 5-10 minute period and telephoning the researcher if unsuccessful, to reschedule appointments. The participant was provided with a telephone number of a crisis center for emergencies that may have arisen during the week (see Appendix A). The participant was informed that the researcher would check her email account every day for any messages she may have left regarding rescheduling or any questions that may arise. The researcher normalized the participant's difficulties by stating that study anxiety was common to university students. During this session the participant's study session pattern was discussed. It was discovered during baseline that she would increase her study time just before an assignment or a test, but did not study consistently between due dates and test

times. The participant's automatic thought patterns just before due dates were discussed and negative patterns were identified. A connection between anxious thoughts concerning her work (e.g. "There's too much to do I'll never get it done" or "What if I missed the point of the assignment?") and her anxiety levels was evident. She was asked to monitor her negative thought patterns over the course of the study (see Appendix K). The participant agreed that a steady rate of daily study time would help her cover the required study material and prepare adequately for assignments and tests. It was agreed that a regular study session should be maintained for at least 6 days each week (starting from Day 16) and that one day in the week would be set aside as a rest from study. The agreed duration of each daily study period was ½ an hour. The participant was instructed to continue collecting baseline data for Behaviors 2 and 3.

Session 2 (Day 23) occurred a week later. The participant delivered her data collection for the previous week before the session. It was discovered that she had not achieved the criteria set at the previous session. During the session the data patterns for the previous week were examined and some impediments to achieving the set goal of half an hour of study every day for six days were discovered. The reasons for this were ascertained and the benefits of a consistent study pattern were discussed. In particular the fact that a consistent daily study time would enable her to obtain early feedback from her lecturer so that she would maintain the correct focus on her assignments was stressed. Suggestions that would reduce distractions that she experienced were provided. It was suggested that she should turn off the TV and radio and close her room door to prevent distractions. It was also suggested that she should instruct her flat mates to take phone messages for her while she studied. The connection between last minute work (antecedent), anxious thought patterns (behavior) and anxiety levels (consequence) was

discussed. Starting from Day 24 she was encouraged to meet the set criterion from the previous week.

By Session 3 (Day 30), the participant had achieved the agreed level of half an hour of study for six days in a week. Therefore during this session Behavior 2 (Number of pages read) was targeted for intervention. The participant was encouraged to maintain her established pattern for Behavior 1 (Hours of study) while Behavior 2 (Number of pages read) was targeted. Baseline levels for this activity were examined and found to be inconsistent though its overall pattern corresponded with that of Behavior 1 (Hours of study). It was agreed that she would attempt to read at least six pages in the half-hour period she studied for starting from Day 31. She was provided with information on how to optimize her reading speed and efficiency (Appendix P contains the information provided to the participant). The participant's negative thought patterns and how consistent study behavior may effect them was discussed.

By Session 4 (Day 38) the participant had maintained the agreed level of six pages a day during the half-hour study period. The participant was asked if she had any difficulty maintaining these levels. The way her newly established patterns of study behavior affected her thought patterns concerning study was examined. At this point she decided that she wanted to increase her study time duration and the number of pages she read accordingly. During this session the criteria for Behavior 1 (hours of study) and Behavior 2 (number of pages read) were changed. The participant decided to study for 1 ½ hours each day and read 12 pages from Day 39.

During session 5 (Day 49) the participant stated that due to an influx of assignments she would like to study everyday without having a break. She also stated that she would like to increase her criterion again to suit her increasing study requirements. She wanted to study for 4 hours each day and read at least 40 pages a day from Day 50.

By this session the participant was beginning to appreciate the benefits of a daily study pattern (in particular the effects on her anxiety levels). In this session the baseline levels for Behavior 3 (Quality of note taking) were examined. Her notes did not meet the criteria required of note taking. The participant was then given instructions about note taking according to the Cornell method. She was instructed to structure her notes as close to this method as possible during the next week and attempt to achieve at least 6 points each day from Day 50 for six days. A template on which to base the structure of her notes was provided (Appendix N).

During Session 6 (Day 57), the participant's data for the past week were examined. She had maintained criterion levels for behaviors 1, 2 and 3. The course of this study was discussed and the participant commented on her opinions of receiving support and instruction over the Internet. As the participant had completed her coursework and exams for the semester, data collection was discontinued at this point.

Results

Figure 4 shows the daily levels of the three targeted study behaviors over the course of the study. During baseline for Behavior 1 (Hours of study), the participant displayed variable levels at an average of 0.43 hours per day with no trend. During baseline for Behavior 2 (Number of pages read), the participant exhibited highly variable levels at an average of 8.5 pages a day, with a sudden increase at Day 21 after which there is a decrease to previous levels. The sudden increase at Day 21 corresponds with a similar increase of Behavior 1 on the same day. During baseline for Behavior 3 (Points for note-taking), the participant exhibited variable levels at 0.8 points with no trend.

During the start of on-line therapy for Behavior 1 the participant displayed highly variable levels at an average of 1.5 hours of study per day until Day 23. After Day 23 a stable level of study was evident at an average of 0.5 hours a day for at least six days,

which was the set criterion (criterion levels are indicated by horizontal lines on Figure 4).

After Day 38 there was an increase to a stable average of 1.5 hours to meet changes in

criterion levels (1.5 hours for at least 6 days), until Day 49. After Day 49 there is an

increase to an average of 5.2 hours with an increasing trend until Day 55, followed by a

decreasing trend to Day 57, therefore meeting further changes to criterion of at least 4

hours a day for six days. At the start of on-line therapy for Behavior 2, the participant

showed stable levels at an average of 6.2 pages a day meeting the criterion of 6 pages a

day for at least 6 days, until Day 39. After Day 39 there is an increase to a stable average

of 12.5 pages a day meeting the change in criterion (12 pages a day for at least six days)

until Day 49. After Day 49 there is an increase to an average of 45.1 pages a day with

some variability, meeting further changes in criteria of at least 40 pages a day for six days.

During on-line therapy for Behavior 3 (Points for note-taking) the participant showed a

sharp increase to an average of 7.4 points for note-taking with an increasing trend. This

met the criteria of at least 6 points achieved per day for note-taking for six days.

Figure 5 shows the average daily anxiety levels as recorded by the participant over

the course of the study. The points at which on-line therapy began for Behaviors 1, 2 and

3 and when the STAI trait-anxiety measurements were taken are also indicated. Figure 5

also shows due dates for the participant's assignments indicated by asterisks. During

baseline there is an increasing trend in anxiety levels from a level of 2 to a level of 7

(average of 5.8). At the start of on-line therapy anxiety levels remained at an average of

5.6 until Day 22. After Day 22 there is a decrease to a level of 1 at Day 26. Figure 5 also

shows that from day 28 there is an increase to an average of 3.9 from Day 35 until Day 57

with variability and no trend. The participant's trait-anxiety score during baseline was 36,

which was within the average range expected for college students. Her trait-anxiety scores

after the study was the same.

Figure 6 shows the weekly study anxiety ratings as monitored by the Independent Assessor against those of the participant. A maximum score of 50 is achievable on the study anxiety form, the higher the score the higher the study anxiety. Overall the participant's scores were higher than those of the independent assessor, with no apparent trend.

Table 3 shows the results of the content analysis carried out on the session transcripts. Factors relating to extreme workload were the primary focus of sessions for the participant. External non-study-related factors were discussed rarely. Inter-rater agreement of 80% was achieved during the coding of the categories.

When the participant examined all her data on Day 25 and after the study, she stated that the results reflected her experience, therefore adding to face validity of the results.

Discussion

The results of study 2 showed that on-line CBT resulted in an improvement of the targeted study behaviors and there was a subsequent decrease in the participant's anxiety levels after Day 21 of the study. On-line CBT increased all three study behaviors. A clear functional relationship was shown between on-line CBT and Behaviors 2 (Number of pages read) and 3 (Points for note-taking), both of which improved upon the introduction of on-line counseling. There was however, a delay in the gains in consistency for Behavior 1 (Hours of study) until Day 23. There was also a delay in reduction of the participant's anxiety levels until Day 21. These delays in treatment gains are discussed below.

The delay in gains for Behavior 1 and the delay in the reduction of anxiety levels may have been affected by the participant's deadline for her first assignment. The first assignment, which was due on Day 21, greatly increased levels of Behavior 1 (Hours of

study) on that day. The participant's anxiety levels also remained at baseline levels until Day 21. For Behavior 1, Day 21 occurred at the start of on-line therapy, and as a result the participant was not able to meet the set criterion levels until after this day. The fact that the participant displayed inconsistent study patterns during baseline may have left her with no choice but to greatly increase levels of Behavior 1 in order to complete her assignment which was due near the start of on-line CBT. This is consistent with the participant's own reports of leaving assignments to the last minute. However, the remaining two assignments, due on Day's 46 and 54, did not similarly affect the consistency of Behaviors 1 and 2 or the participant's anxiety levels. This suggests that on-line CBT assisted in establishing consistent patterns of study behavior that did not necessitate last minute study or increased anxiety levels around due dates for the participant. The effectiveness of on-line CBT is also highlighted by the fact that while both Behaviors 1 and 2 were greatly increased on Day 21, Behavior 2 returned to baseline levels after Day 21, whereas Behavior 1 (which received the intervention) remained at criterion levels. Behavior 2 did not meet criterion levels until intervention commenced.

The Independent Assessor's assessment of the participant's study anxiety did not correspond with those of the participant. A post treatment interview revealed that the Independent Assessor did not have as frequent contact with the participant as required by the design of the study. This may explain the discrepancies between the weekly assessments. Additionally these weekly ratings of study anxiety did not correspond with the overall pattern of anxiety as revealed by the daily measures. While the daily ratings of anxiety revealed a decrease from baseline levels after Day 21, there is no indication of this trend in the weekly study anxiety patterns. It is possible that weekly measures of anxiety are not sensitive enough to pick up subtle changes in anxiety patterns that maybe more evident from daily measures. Additionally the weekly measures targeted study anxiety

whereas the daily measures were more general measures of anxiety. This may also have contributed to the discrepancy between the daily and weekly ratings.

The content analysis of the session transcripts established that the on-line CBT sessions remained focused on study-related variables. This assured that it was the presenting problem and not another that was targeted by the planned intervention. This is in contrast to Study 1 where content analysis showed that non-study-related variables were the focus of the therapy sessions for most of the participants. This highlights a possible reason why the intervention provided in Study 1 was not as effective as the intervention provided in Study 2; that is, an intervention is most effective when it targets a problem that it was designed to treat (study anxiety as opposed to non-study-related variables). Table 3 reveals that an average of 5 statements concerning extreme workload was made each session. Though this may appear to be a relatively low number of statements made by a participant about a presenting problem during a session, the time taken for people to type and respond to statements must be considered. Communicating in a chat environment is a slower process than speech because of factors such as typing speed. On-line therapy sessions may therefore need to be longer in order to cover all the material planned for a face-to-face session.

The data obtained from Study 2 were more complete than those of Study 1. This may be attributed to the more stringent screening of the participant in Study 2 to include someone with less complex problems, and the reduction of the self-monitoring work required from the participants. Study 2 provided longer baselines than Study 1 so that treatment gains were clearer. By targeting study behavior, Study 2 had a more direct focus than Study 1 to produce more favorable results for the participant. However the technological problems experienced in Study 1 were also experienced in Study 2. The connection to the server was disrupted several times leading to frustration in both the

researcher and the participant highlighting the fact that telephone contact during such situations is vital.

<div align="center">General Discussion</div>

The results of Study 1 were inconclusive due to a large amount of missing data, the reasons for which have been discussed previously. As a result no conclusions could be drawn about the effects of CBT provided via an Internet chat environment on study-related anxiety. Study 2 however produced a complete set of data and showed that on-line CBT increased previously inadequate levels of study behavior and lowered study-anxiety levels.

The results of Study 2 support the findings of Chitrangi (1995) and Petrie and Helmcamp (1998), who found that improving faulty study habits in students (by providing interventions in traditional face-to-face settings), led to a decrease in their anxiety levels. The results of Study 2 also support the findings of Hains (1992), Vagg and Papsdorf (1995), Vinson (1980) and Wilson and Rotter (1986), who successfully used CBT based strategies to alleviate student anxiety in face-to-face settings. In particular Vagg and Papsdorf (1995) and Wilson and Rotter (1986) used a combination of CBT strategies and study skills therapy to lower student anxiety levels. The similarity of results produced in these studies and Study 2 suggest that an intervention provided in a chat-based Internet environment has the potential to produce similar results to an intervention delivered in a face-to-face setting.

The difference between these face-to-face studies on study anxiety and chat-based studies like Study 2 and Cohen and Kerr (1998), appears to be the levels of anxiety targeted for intervention. Study 2 and Cohen and Kerr (1998), targeted lower levels of anxiety (as measured by the STAI) than the face-to-face studies which targeted higher levels of anxiety. Future studies that investigate the effectiveness of chat-based therapy in

reducing high levels of anxiety would provide valuable research. Such studies would help therapists establish the boundaries within which chat-based therapy is effective.

The results of Study 2 support the findings of Cohen and Kerr (1998) who reported that a chat-based Intervention is an effective way to deal with student anxiety. Study 2 extended Cohen and Kerr's work by providing more than one chat-based therapy session to the participant, therefore suggesting that a chat-based environment may be effective for on going therapy work. The use of changing criterion levels over time in Study 2 also demonstrated more control over the experimental variables by the intervention than Cohen and Kerr's work, more clearly showing the effectiveness of the intervention. Similar conclusions could not be drawn from the studies of and Wander-Schwartz (2000) and Sander (1996) on group therapy conducted in a chat-based environment. Though the findings of these two studies implied some success with using chat environments for therapeutic purposes, neither produced conclusive findings. Sander's early study was possibly the first published on chat-based therapy, and the results may reflect lack of familiarity with the technology in the participants. Barak and Wander-Schwartz attribute the statistical non-significance of their results to their small sample size and limited number of on-line sessions. Given that Study 2 produced conclusive results using one participant and that Cohen and Kerr (1998) produced conclusive results using one therapy session, it is possible that group therapy is harder to apply in a chat environment than individual therapy. However the sparse amount of research currently available in the area of chat-based therapy prevent firm conclusions being drawn about this issue.

Given the newness of the field of chat-based therapy care must be taken when considering the implications of the results of Study 2. The positive nature of the findings of Study 2 cannot be considered generalizable across all anxiety in students. As Study 1

revealed, the severity of two of the participants' anxiety may have reflected that the cause of their anxiety were problems other than study-related variables. In the case of one of these participants domestic violence was an issue, resulting in the participant needing to seek specialist intervention in a face-to-face environment. Across both Studies 1 and 2, the participants who displayed the most gains were those whose anxiety was not confounded by non-study-related variables. A comparison of Studies 1 and 2 does suggest that students with low anxiety levels are more likely to benefit from on-line therapy than students with high anxiety levels. Vagg and Papsdorf (1995), in their face-to-face study successfully treated students with high levels of anxiety. This may suggest a major difference between on-line and face-to-face settings where high student anxiety which may reflect more complex problems may be better dealt with in-person.

Cohen and Kerr did not state the specific nature of the anxiety experienced by their undergraduate participants, Barak and Wander-Swartz did not specify the nature of their participants' problems, and Sander was concerned with relationship issues. Therefore as Cohen and Kerr (1998) may be the only study currently available on the treatment of anxiety in chat-based environment, more research would be needed to establish the success of on-line therapy with specific types and severities of anxiety. This highlights the importance of informing clients of the boundaries within which chat-based therapy is effective; boundaries marked by traditional interventions for known problems and what is known about how these interventions translate to a chat-based environment. Until specific chat-based interventions are developed this process is a necessity.

The methodological problems encountered during the course of both studies are as follows. The most prominent problem encountered while conducting both Studies 1 and 2 was failure of the Internet connection during the counseling sessions. This was particularly serious during sessions involving Participants 2 and 3 in Study 1 who were

found to have more complex anxiety problems. An interruption during a counseling session is in general an unwanted incident. When it occurs in a chat environment there is an immediate and abrupt severing of communication and presence between therapist and participant that can be jarring, especially if in the middle of a flow of conversation. In the case of participants with more severe problems such an occurrence may be detrimental, especially if it occurs on a regular basis. For this reason people with more severe problems may benefit more from face-to-face therapy which is less likely to be disrupted frequently.

The independent assessors were used as estimates of reliability in the studies. In both Studies 1 and 2 the independent assessors estimations of the participants' study anxiety did not correspond with the participants' own measure. The higher levels of anxiety reported by the participants reflects findings by Vinson, (1980) who reported covert levels of anxiety as being higher than overt levels of anxiety. This in turn reveals that this was not measure of reliability (given that the participants measured covert anxiety and the assessors measured overt anxiety). Also the patterns of anxiety recorded by the independent assessors and the participants' do not correspond with each other. This may suggest that the independent assessors required more detailed instructions about the nature of their task. More rigorous training of observers is necessary. These differences may also reflect the possibility that the independent assessors did not have as frequent contact with the participant as required by the study. A comment made by Participant 1 in Study 1 reveals another possibility that may have caused this discrepancy. Participant 1 stated that he hid the true nature of his anxiety levels from his independent assessor so as not to worry her (his wife). The independent assessors were used as an indicator of reliability of the participants' self-recording in these studies. The study required the independent assessor to be a person who had contact with the participant every day.

However the very nature of the relationship of a person who had contact with each participant daily may have influenced how much a participant is likely to reveal in his/her presence. Future research involving single participants should consider alternative estimates of reliability.

Even though the results of Study 2 clearly displayed intervention gains, the participant stated that she was not entirely comfortable with using a chat environment to communicate as she felt there was too much opportunity for misunderstandings. This reflects a problem discussed by Sampson (1998), who stated that a literacy barrier would exclude people who were not comfortable or fluent with the written word from benefiting from text-based Internet interactions. Sander (1996) also discussed the possible barriers that may arise due to a lack of familiarity with the technology by participants. Though the participant from Study 2 benefited (as indicated by the results) from the chat-based therapy process, precautions could have been taken to verify whether she was comfortable with the text-based interaction. This suggests that familiarity with computers and the Internet as gauged by Appendix E, does not necessarily reflect comfort with interacting in a text-based environment. Future research would benefit from allowing participants two trial chat sessions in which to decide if they feel comfortable with text-based expression.

The field of chat-based therapy could benefit from future research that considered the following options. More single participant studies would increase awareness about processes experienced by individuals undertaking chat-based therapy. This would add to the generalizability of on-line therapy. Study 2 and Cohen and Kerr (1998) provide evidence that interventions provided in a chat environment produce similar results to interventions provided face-to-face for anxiety related problems. More research is needed to investigate how results produced in these environments compare with each other, i.e. is chat-based therapy as effective as face-to-face therapy for anxiety problems? Comparing

on-line intervention with telephone intervention would provide information about how these types of distance therapy compare with each other in effectiveness. Comparing estimations of therapist effectiveness across chat, telephone and face-to-face environments would provide valuable information about differences (if any) in clients' perceptions of their therapists in different environments. Studies in this area would contribute to efforts made by Cohen and Kerr (1998). Investigating the effectiveness of on-line therapy in treating different types and severities of anxiety would extend the findings of Study 2. Cohen and Kerr (1998) state that though their study provided valuable results, the effectiveness of chat-based therapy with anxiety in diverse ethnic and socioeconomic groups is also needed.

The results of Study 2 have contributed to the field of chat-based therapy by producing conclusive results that support and extend existing research. The findings of Study 2 together with the findings of Cohen and Kerr (1998) indicate that a synchronous chat-based environment is an effective medium through which to provide interventions for anxiety and the improvement of study habits in students. Study 2 also suggests that CBT is an effective treatment for use on-line as it produced similar results to studies that applied CBT in a face-to-face setting. The current scarcity of research in the area of chat-based therapy is reflected by the extent of possible future directions for research in the field. In order to gain a full understanding of the area more research is needed to provide knowledge of appropriate intervention methods, knowledge of the effectiveness of intervention methods with different population groups and knowledge of how chat environments compare with traditional therapy environments. An increased knowledge base would extend theory, improve practice and further research in the field.

References

Abouserie, R. (1994). Sources and levels of stress in relation to locus of control and self-esteem in university students. Educational Psychology, 14, 323-330.

Baily, P., Onwuegbuzie, A. J. & Daley, C. E. (2000). Study skills of undergraduate students as a function of academic locus of control, self-perception and social interdependence. Psychological Reports, 83, 595-598.

Barak, A. & Wander-Schwartz (2000). Empirical evaluation of brief group therapy through an internet chat room. Journal of Virtual Environments, 5 [On-Line Serial]. Available WWW: http://brandeis.edu/pubs/jove/ [2001, March 22].

Beck, J. S. (1995). Cognitive Therapy: Basics and Beyond. New York: The Guildford Press.

Bloom, J. W. (1998). The ethical practice of WebCounseling. British Journal of Guidance and counseling, 26 (1), 53-59.

Childress, C. (1999). Potential Risks and Benefits of Online Psychotherapeutic Interventions. In International Society for Mental Health Online [on-line]. Available WWW: http://www.ismho.org/issues/9801.htm [2000, December, 12].

Chitrangi, S. (1995). Efficacy of study skills training in managing study habits and test anxiety of high test anxious students. Journal of the Indian Academy of Applied Psychology, 21(1), 71-75.

Cohen, G. E. & Kerr, B. A. (1998). Computer-mediated counseling: An empirical study of a new mental health treatment. Computers in Human Services, 15(4), 13-26.

Collins, L. (1999). Effective Strategies for Dealing with Test Anxiety. Teacher to Teacher Series. USA: Ohio Literacy Resource Center.

Cook Counseling Center, (2000). Study Habits Inventory [On-line]. Available WWW: http://yhspatriot.yorktown.arlington.k12.va.us/depts.sped/time.html [2000, January 8].

Davis, M., Eshelman, E. R., & McKay, M. (1995). The Relaxation and Stress Reduction Workbook 4th edition. California : New Harbinger Publications.

Deffenbacher, J. L., & Michaels, A. C. (1981). Anxiety management training and self-control desensitization: 15 months later. Journal of Counseling Psychology, 28, 459-562.

Frydenberg, E. & Lewis, R. (1996). Coping Scale for Adults. Melbourne: Australian Council for Education Research.

Guba, E. (1981). Criteria for assessing the trustworthiness of naturalistic enquiries. Educational Communications and Technology, 29, 75-81.

Guba, E. & Lincoln, Y. (1981). Effective Evaluation. San Fransisco: Jossey-Bass.

Hains, A. (1992), A stress inoculation training program for adolescents in a high school setting: a multiple baseline approach. Journal of Adolescence, 15(2), 163-175.

Kennerley, H. (1995). Managing Anxiety : A Training Manual 2nd edition. New York : Oxford University Press.

Macqueen, C. (1998). Getting ahead in tertiary study: A practical guide for business, social sciences and arts students. Sydney : UNSW Press.

McEvedy, M. R. & Jordan, M. (1986). Succeeding at University and College. Melbourne: Nelson.

McKenna, K. Y. A. & Bargh, J. A. (1998). Coming out in the age of the Internet: Identity 'demarginalization' through virtual group participation. Journal of Personality and Social Psychology, 75, 681-694.

Nist, S. L. & Diehl, W. (1990). Developing Textbook Thinking. MA: Lexington.

Pauk, W. (1993), How to Study in College (5th edition), Boston : Houghton Mifflin.

Petrie, T. A. & Helmcamp, A. (1998). Evaluation of an academic study skills course. Journal of College Student Development, 39, 112-116.

Reason, P. & Rowan, J. (1981). Issues of validity in new paradigm research. In P. Reason & J. Rowan (Eds.), Human Inquiry: A Sourcebook of New Paradigm Research (pp. 239-262). New York: John Wiley.

Rosenfield, M. (1997). Counseling by Telephone. London : Sage Publications.

Sampson, J. P. J. (1998). The Internet as a potential for social change. In L. Courtland & G. R. Waiz (Eds), Social Action: A mandate for counselors. USA: American Counseling Association.

Sander, F. M. (1996). Couples group therapy conducted via computer mediated communication: A preliminary case study. Computers in Human Behavior, 12(2), 301-312.

Sanders, P. & Rosenfield, M. (1998). Counseling at a distance: Challenges and new initiatives. British Journal of Guidance and Counseling. 26(1): 5-10.

Sarason, I. G. & Sarason, B. R. (1991). Test anxiety. In H. Leitenberg (Ed.), Handbook of Social and Evaluation Anxiety. New York: Plenum Press

Sarantakos, S. (1998). Social Research, 2nd Edition, London: Macmillan.

Segall,R. (2000). Online shrinks: the inside story. Psychology Today. May/June.38-43.

Spielberger, C. D. (1977). State-Trait Anxiety Inventory. California: Mind Garden.

Suler, J. (1997b). Psychological Dynamics of Online Synchronous Conversations in Text-Driven Chat Environments [On-line]. Available WWW: http://www.rider.edu/users/suler/psycyber/texttalk.html [1999, December 13].

Uecker, K. E. (1997). Psychodynamic considerations of online counseling. Perspectives. A Mental Health Magazine. January-Febuary, 1997 [On-line]. Available WWW: http://www.cmhc.com/perspectives/articles/art0971.htm [1999, August 30].

Vagg, P. R. & Papsdorf, J. D. (1995). Cognitive therapy, study skills training and biofeedback in the treatment of test anxiety. In C.D. Spielberger, P.R. Vagg & J.D. Papsdorf (Eds.), Test Anxiety: Theory, Assessment and Treatment. Washington, DC: Taylor & Francis.

Vance, W. R. & Watson, T. S. (1994). Comparing anxiety management training and systematic rational restructuring for reducing mathematics anxiety in college students. Journal of College Student Development, 35(4), 261-266.

Vinson, M. L. (1980). The effect of anxiety management training on college students' general, overt and covert anxiety. Dissertation Abstracts International, 4(11-A).

Wilson, N. H., & Rotter, J. C. (1986). Anxiety management training and study skills counseling for students on self-esteem and test anxiety and performance. School Counselor, 34(1), 18-31.

Table 1.

<u>STAI Scores Obtained from Participants During the Study.</u>

Fortnightly state-anxiety scores

Participant	STAI-state 1 (T1)	STAI-state 2 (T2)	STAI-state 3 (T3)	STAI-state 4 (T4)
1	38	58	33	40
2	69	64	46	34
3	47	46	40	40

Pre and post therapy trait-anxiety scores:

Participant	Pre-therapy	Post-therapy		
1	44	41		
2	58	47		
3	58	(data missing)		

<u>Note.</u> The mean state-anxiety score for male college students is 36.47 (sd=10.02). The mean for females is 38.76 (sd=11.95). Mean trait-anxiety score for male college students is 38.3 (sd=9.18). The mean for female college students is 40.40 (sd=10.15).

Table 2

Average Frequency Per Session of Participant Statements Relating to Each Conversation

Category

Participant	Categories				
	1. Extreme workload	2. Distraction from study plan	3. Physical symptoms	4. Psychological symptoms	5.External variables
1	6	1	1	1	0
2	5	0	7	7	11
3	4	3.5	4	4	2.5

Table 3.

Average number per session of participant statements relating to each content category

	Category 1 (Extreme work load)	Category 2 (Distraction from study plan)	Category 3 (Physical symptoms)	Category 4 (Psychological symptoms)	Category 5 (External variables)
Frequency	5	.5	.25	1.25	.75

Figure Captions

Figure 1. Average Daily Anxiety Levels for Participants

Figure 2. Participants' Ratings of Weekly Study Anxiety Plotted Against Those

of the Independent Assessors

Figure 3. Hours of Study Behavior Per Day for Participants

Figure 4. Participant's levels of Study Behaviors Over Time

Figure 5. Average Daily Anxiety Levels for Participant Across On-line Counseling

for Behaviors 1,2 and 3

Figure 6. Participant's Weekly Rating of Study Anxiety Plotted Against Those of

the Independent Assessor
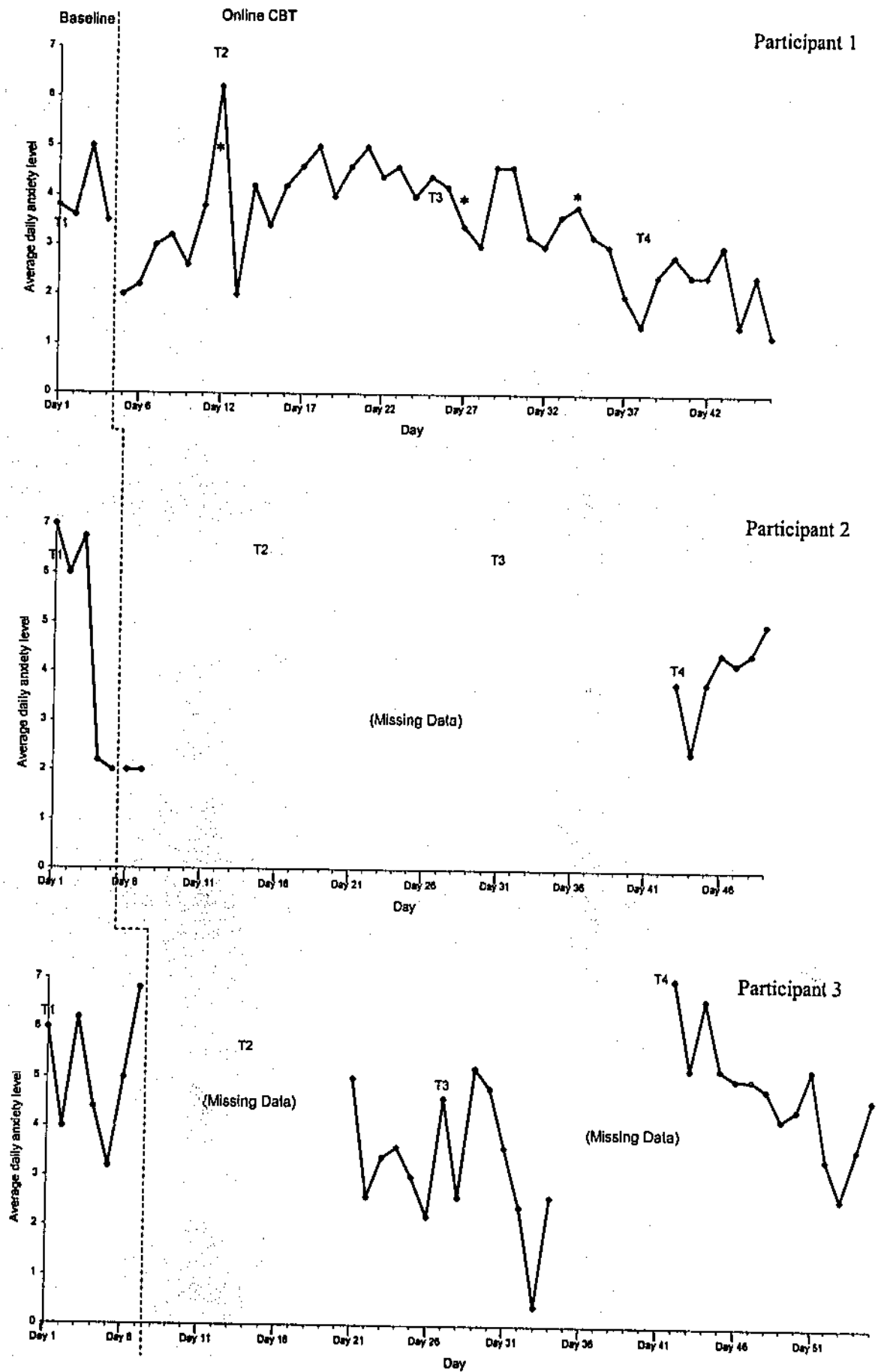
Figure 1. Average daily anxiety levels for participants (missing data and time periods T1 – T4 are indicated). Due dates for assignment are indicated by asterisks.
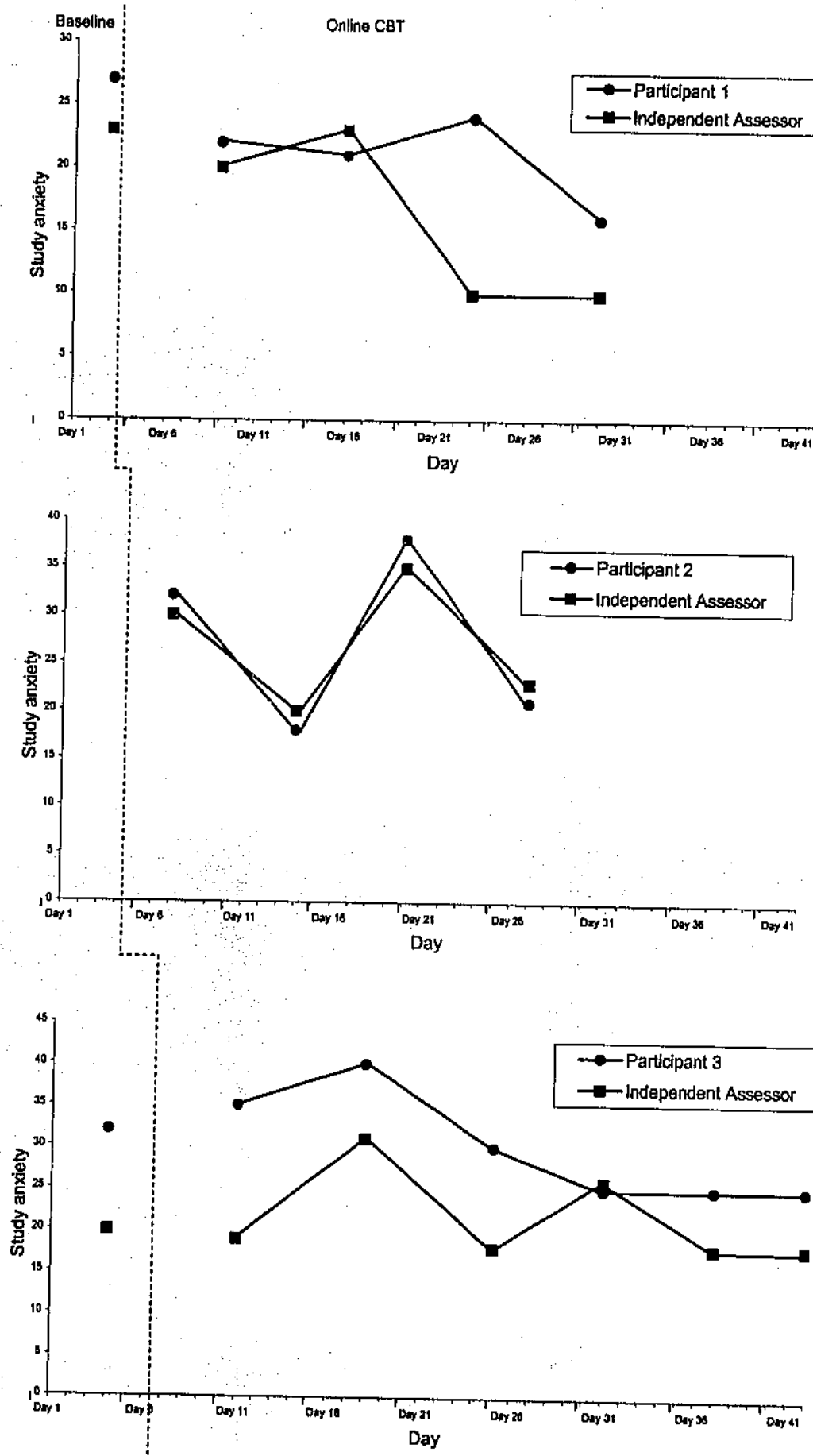
Figure 2. Participants' ratings of weekly study anxiety plotted against those of the independent assessors.
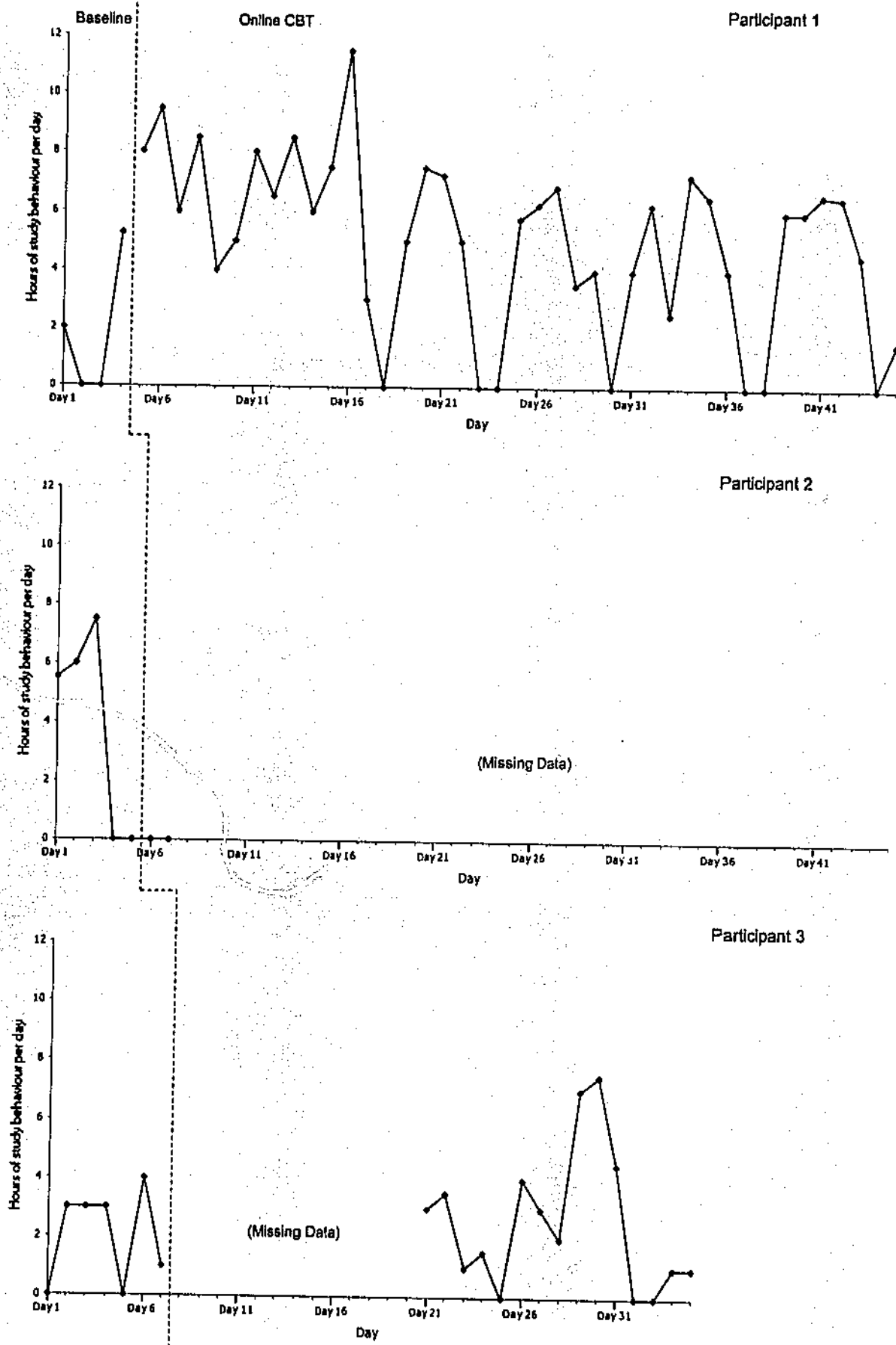
Figure 3. Hours of study behavior per day for participants (missing data is indicated).
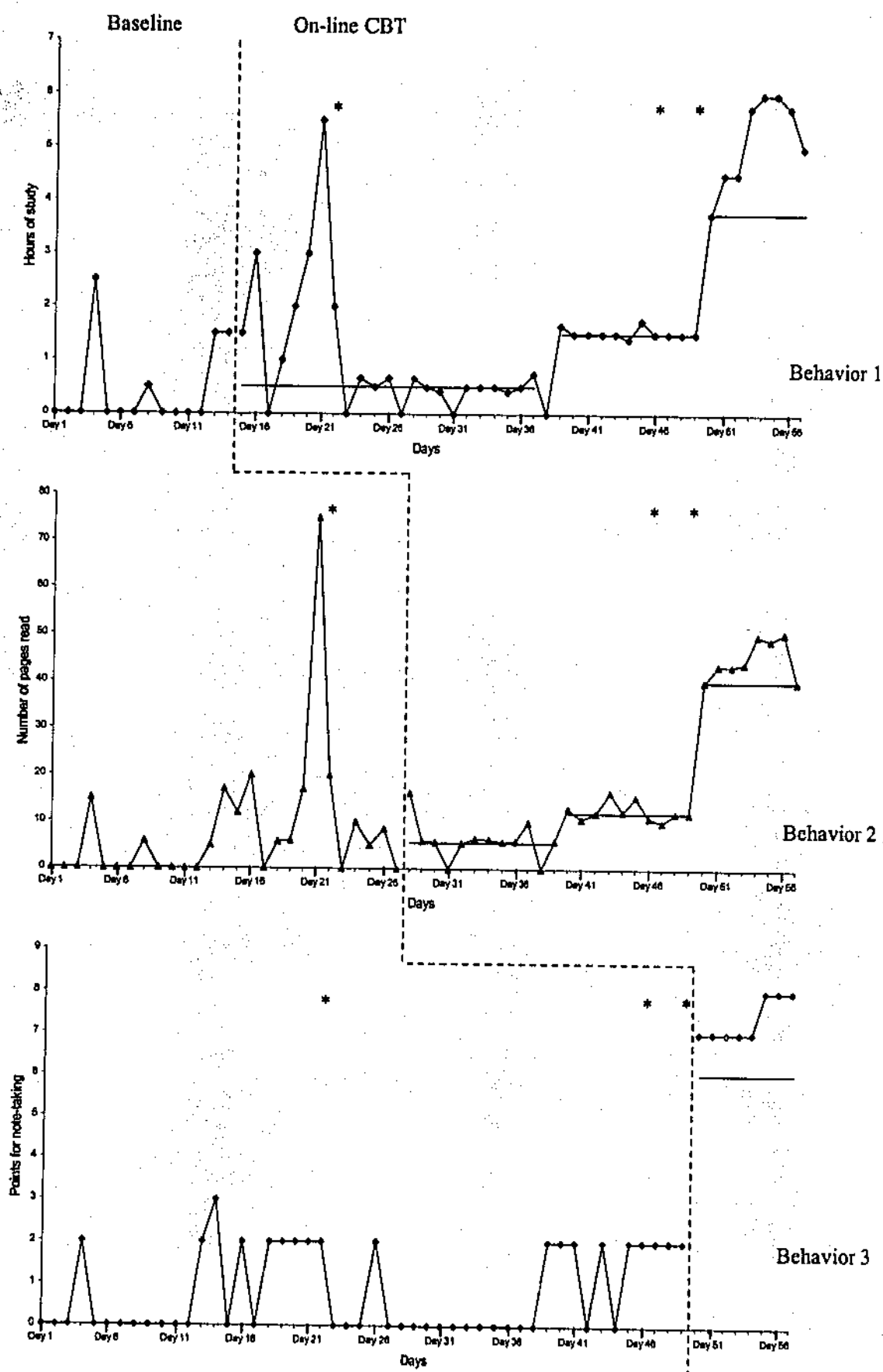
Figure 4. Participant's levels of study behaviors over time. Due dates for assignments are indicated by asterisks.
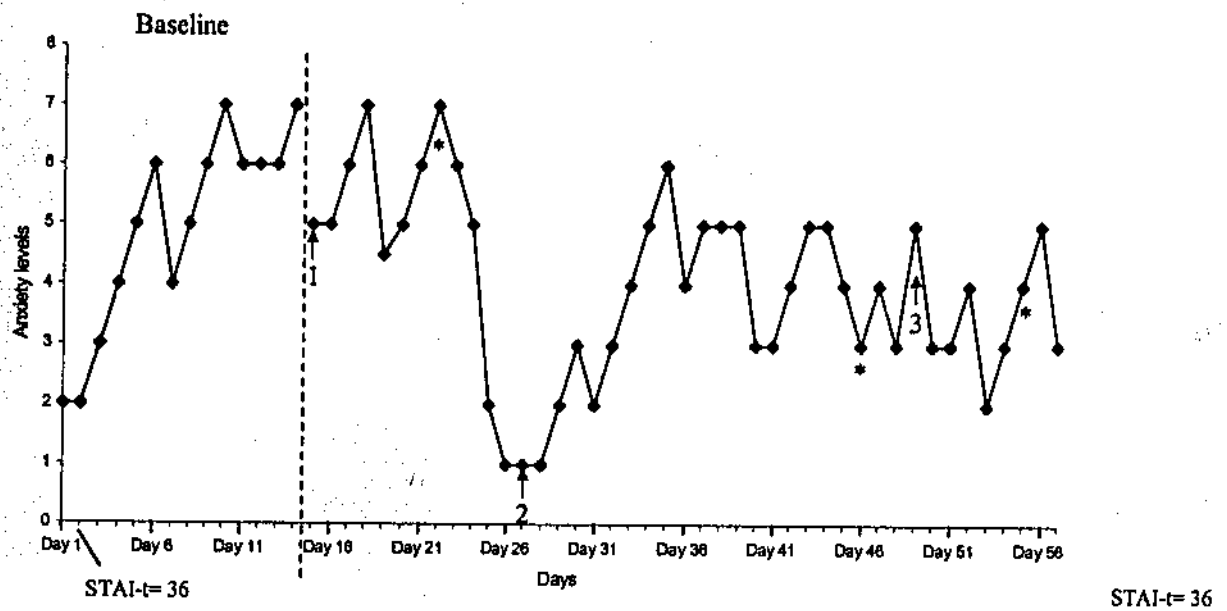
Figure 5. Average daily anxiety levels for participant across baseline and on-line therapy for Behaviors 1,2 and 3 (indicated with arrows). Due dates for assignments are indicated by asterisks. Pre- and post-trait anxiety levels are shown below the figure.
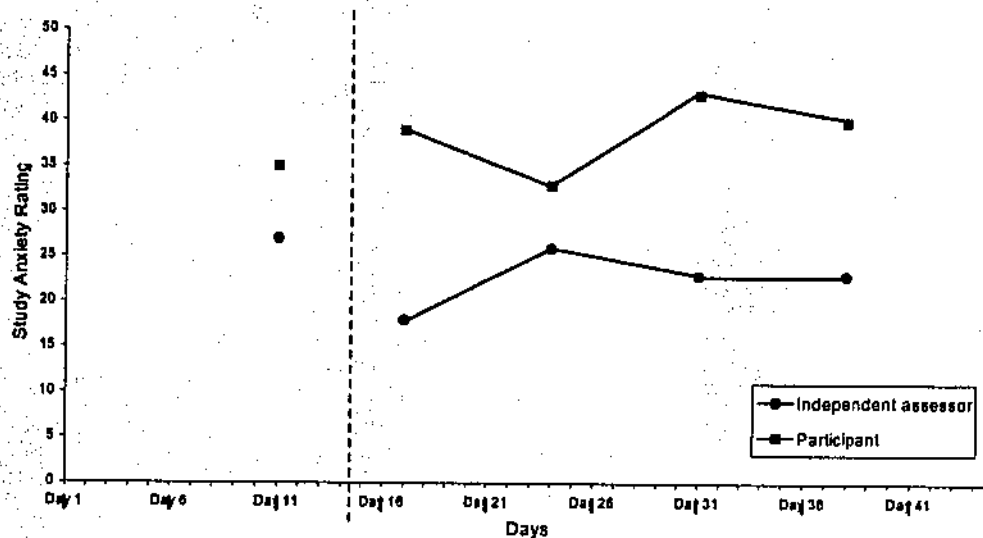
Figure 6. Participant's weekly ratings of study anxiety plotted against the independent assessor's ratings.

APPENDICES

Appendix A
Instructions for Internet access

We will meet once a week on the virtual campus of ECU.

1) At the arranged time please go to the ECU web page. (www.cowan.edu.au)
2) Click on "virtual campus"
3) Click on the "chat" icon at the top of the screen.
4) Click on the blue bar that says "log in to chat room".
5) In the "longin" section type in the login name you use at the megalabs without the usual extentions. For instance instead of .jsmith.al.jo, you would type "jsmith" or what ever you login name is.
6) In the password section please type your usual login password that you would use at the megalabs.
7) If this doesn't work use the following login name and password: arodrigo (login) and funky1 (password). Please do not give this information to anyone else.
8) This will get you into the chat rooms. At the bottom of the chat screen where it says "arodrigo", change it to own your name. Then click on "tutorial room 1" and click on 'chat'. You should then see me there in tutorial room 1. I will then initiate the session.

In case something goes wrong: please contact me at this mobile number 0414358426.

If the connection is broken, please try again in 5 minutes. If we are unable to continue, we will close the connection and contact each other by phone in 10mins time. Try me at either that mobile number or 94005853.

During the week if you feel the need to talk to someone, please send me an email or phone up Lifeline. Their qualified counsellors can be a great source of support : 13 11 14 (24hrs).

Our first session will be a try out session so that you can get used to the system and we can get to know each other.

Thanks,

Anoushka

Appendix B

! Support for first year students !

Do you stress out over uni exams and assignments?
If you would like some support in managing your stress levels during the semester, the following idea may be an option for you.

Hi, my name is Anoushka. I am very interested in finding out about new effective ways to help first year students manage their anxiety levels. As a part of my master's degree, I plan to offer **counselling and support via the Internet** to students who have problems with study anxiety. This will involve meeting one-on-one with each student weekly in a secure 'chat environment' over the course of 6 weeks in the semester.

As this is a preliminary study there are only a few places available for interested students, so please express your interest as soon as possible. Don't worry, you don't have to be a computer genius to sign up! If you are comfortable using computers, the Internet and email
This study may suit you.

If you are interested and would like to find out if this study would suit you, or if you have any questions, please contact me at the following number or email address:
94005853; anoushkac@hotmail.com,
And I will send you some forms that will help decide if this study is for you. Please note that any information shared during the counselling sessions will only be available to my supervisor, Dr. Lu Arco and myself and will be considered confidential.

Thanks,

Anoushka Candappa

Appendix C
Stress Vulnerability Questionnaire

This questionnaire relates to your general fitness and wellbeing. Read each statement carefully and reflect upon your typical behaviours. For each statement please choose a number that indicates how often the statement describes you.

Always	Most of the time	Sometimes	Almost never	Never
1	2	3	4	5

1.____ I eat at least one hot balanced meal a day.

2.____ I get 7-8 hours of sleep at least four nights a week.

3.____ I give and receive affection regularly.

4.____ I have at lease 1 relative within 50 miles on whom I can rely.

5.____ I exercise to the point of perspiration at least twice a week.

6.____ I smoke less than half a pack of cigarettes a day.

7.____ I take fewer than 5 alcoholic drinks per week.

8.____ I am the appropriate weight for my height.

9.____ I have income adequate to meet my basic needs.

10.____ I get strength from my religious beliefs.

11.____ I regularly attend club or social activities.

12.____ I have a network of friends and aquaintences.

13.____ I have one or more friends to confide in about personal matters.

14.____ I am able to speak openly about my feeling when angry or worried.

15.____ I have regular conversations with the people I live with about domestic problems such as chores, money and daily living issues.

16.____ I do something for fun at least once a week.

17.____ I am able to organise my time effectively

18.____ I drink fewer than three cups of coffee (or tea or soft drink) a day.

19.____ I take quiet time for my self during the day.

20.____ I am in good health, including eyesight, hearing, dental health, etc.

Appendix D
Test Anxiety Questionnaire

Nist and Diehl (1990) have developed a short questionnaire for determining if a student experiences a mild or severe case of test anxiety. To complete the evaluation, read through each statement and reflect upon past testing experiences. You may wish to consider all testing experiences or focus on a particular subject one at a time.

Never	Rarely	Sometimes	Often	Always
1	2	3	4	5

1.____ I have visible signs of nervousness such as sweaty palms, shaky hands and so on right before a test.

2.____ I have 'butterflies' in my stomach before a test.

3.____ I feel nauseated before a test.

4.____ I read through the test and feel that I do not know any of the answers.

5.____ I panic before and during a test.

6.____ My mind goes blank during a test.

7.____ I remember the information that I blanked on, once I get out of the testing situation.

8.____ I have trouble sleeping the night before the test.

9.____ I make mistakes on easy questions or put answers in the wrong places.

10.____ I have difficulties choosing answers.

From: Nist, S.L. and Diehl, W. (1990), Developing textbook thinking. MA: Lexington.
[Made Available at: http://muskingum.edu/~cal/database/monitoring.html]

Appendix E

Questions relating to comfort with using the computer and the internet

(please underline your response)

1) Do you type your own assignments?   Yes   No

2) Do you have an email account?   Yes   No

3) How often do you check your email each week?
    i)Every day or more often   ii)more than 5 times

       iii)more than 3 times   iv)more than 2 times

       v)once a week   v)less than once a week

4) Have you used attachments to send documents to people through email? Yes   No

4) Do you use the internet for anything else?   Yes   No

5) If 'yes' what do you use the internet for?
    i)Research   ii)Chatting
    iii)Email   iv)Surfing for sites of interest
    v)other (please specify)_____

Appendix F
Information sheet

Dear ....,

Thank you for expressing an interest in participating in this study. This study aims to help individuals to cope with study related anxiety. It would be appreciated if you complete the enclosed forms that will help determine if this study will suit you.

You will find 5 short questionnaires. One relating to your comfort with using computers and four relating to the levels of anxiety you may experience during assessment periods in the semester. Please follow the instructions for each questionnaire, punch in your answer on the sheet and return the forms to me as attachments in an email. You will also be required to fill out the attached consent form.

Please note that this is not a test. This is merely a means of ensuring that this study will benefit you.

The results will be considered confidential and only be viewed by my self and my supervisor, Dr. Lu Arco. Please do not hesitate to contact me if you have further questions at the following email address anoushkac@hotmail.com ; or my supervisor Dr. Lu Arco at the following number:(08) 94005192.

Thank You,

Anoushka Candappa

Appendix G
Self-Monitoring Items for participant

Date:.......................

Please indicate how often you observed the following in yourself in the last week.

1=never   4=often
2=once   5=very often
3=a few times

_____1) Concern about what lecturer/ tutor may think of you.

_____2) Concern about your ability to handle courses or about the effects of failing

_____3) Talked or thought about how much time there was left for due dates or exams

_____4) Talked or thought about how or what others are doing in terms of study/ assessments

_____5) Concern about an upcoming exam or assessment

_____6) Concern about getting a marked assignment or test back

_____7) Concern about the future in general (e.g. uncertainty about possible events)

_____8) Felt tense and worried (about work, university or another matter)

_____9) Criticised your ability to work

_____10) Felt that it would be unacceptable to achieve less than a certain grade for an assignment or a test.

Developed from scales discussed in:
Sarason, I.G. and Sarason, B.R. (1991), Test Anxiety. In H. Leitenberg (Ed.), Handbook of Social and Evaluation Anxiety. New York:Plenum Press

Appendix H
Observational Items for Independent Assessors

Date:.............................

Please indicate how often you observed the following behaviour in "john" in the last week.

1=never   4=often
2=once   5=very often
3=a few times

_____1) Concerned about what lecturer/ tutor may think of him.

_____2) Concerned about his ability to handle courses or about the effects of failing

_____3) Talk about how much time there was left for due dates or exams

_____4) Talk about how or what others are doing in terms of study/ assessments

_____5) Expressed concern about an upcoming exam or assessment

_____6) Was concerned about getting a marked assignment or test back

_____7) Concerned about the future (i.e. things that may or may not happen in the future)

_____8) Seemed tense and worried (about work, university or another matter)

_____9) Criticised his ability to work

_____10) Indicated that it would be unacceptable to achieve less than a certain grade for an assignment or a test.

Developed from scales discussed in:
Sarason, I.G. and Sarason, B.R. (1991), Test Anxiety. In H. Leitenberg (Ed.), Handbook of Social and Evaluation Anxiety. New York:Plenum Press

Appendix I

Name:.............................. Date:..

Please take some time each day to fill in this sheet.

Time Period	Activity	Time spent on activity (mins)[1]	Anxiety level for whole period (1-10, with 10 being the highest))	Any anxious thoughts during period
8am-12pm	Reading			
	Note taking			
	Formulating questions */writing			
	Fun/relaxation			
	Work (paid/ volunt)			
	Household chores			
12pm-3pm	Reading			
	Note taking			
	Formulating questions */writing			
	Fun/relaxation			
	Work (paid/ volunt.)			
	Household chores			
3pm-6pm	Reading			
	Note taking			
	Formulating questions *writing			
	Fun/relaxation			
	Work (paid/ volunt.)			
	Household chores			
6pm-9pm	Reading			
	Note taking			
	Formulating questions */writing			
	Fun/relaxation			
	Work (paid/volunt.)			
	Household chores			
9pm-12midnight	Reading			
	Note taking			
	Formulating questions *writing			
	Fun/relaxation			
	Work (paid/ volunt.)			
	Household chores			
12midnight-3am	Reading			
	Note taking			
	Formulating questions */writing			
	Fun/relaxation			
	Work (paid/volunt.)			
	Household chores			

---

* Question relates to any questions you developed in your mind after reading and making notes.

Appendix J
Study Habits Inventory

The purpose of this inventory is to find out about your own study habits and attitudes.

1. _Y_N I spend too much time studying for what I am learning.

2. _Y_N I usually spend hours cramming the night before an exam

3. _Y_N If I spend as much time on my social activities as I want to, I don't have enough time left to study, or when I study enough, I don't have time for a social life.

4. _Y_N I usually try to study with the radio and TV turned on.

5. _Y_N I can't sit and study for long periods of time without becoming tired or distracted.

6. _Y_N I go to class, but I usually doodle, daydream, or fall asleep.

7. _Y_N My class notes are sometimes difficult to understand later.

8. _Y_N I usually seem to get the wrong material into my class notes.

9. _Y_N I don't review my class notes periodically throughout the semester in preparation for tests.

10. _Y_N When I get to the end of a chapter, I can't remember what I've just read.

11. _Y_N I don't know how to pick out what is important in the text.

12. _Y_N I can't keep up with my reading assignments, and then I have to cram the night before a test.

13. _Y_N I lose a lot of points on essay tests even when I know the material well.

14. _Y_N I study enough for my test, but when I get there my mind goes blank.
15. _Y_N I often study in a haphazard, disorganized way under the threat of the next test.

16. _Y_N I often find myself getting lost in the details of reading and have trouble identifying the main ideas.

17. _Y_N I rarely change my reading speed in response to the difficulty level of the selection, or my familiarity with the content.

18. _Y_N I often wish that I could read faster.

19. _Y_N When my teachers assign papers I feel so overwhelmed that I can't get started.

Appendix J (continued)
Study Habits Inventory (continued)

20. _Y_N I usually write my papers the night before they are due.

21. _Y_N I can't seem to organize my thoughts into a paper that makes sense.

When Do You Study?	Never	Sometimes	Always
Between the hours of 3 and 5 PM	—	—	—
Between the hours of 4 and 6 PM	—	—	—
Between the hours of 6 and 8 PM	—	—	—
Between the hours of 8 and 10 PM	—	—	—
Later than the above	—	—	—
Week-ends	—	—	—
Vacations	—	—	—

Decide what type of a person you are

A. Morning person
   1. Gets up earlier
   2. Goes to bed earlier
   3. Alert and energetic in the morning
   4. Works well in morning, afternoon, and early evening

B. Night person
   1. Gets up later
   2. Goes to bed later
   3. Alert and energetic at night
   4. Works well in afternoon and all evening

C. I think I'm a(n) _____ person.

Where Do You Study?

In my own room	—
In a room I share	—
In the dining room	—
In the kitchen	—
In the living room	—
In the family room	—
Someplace other than my house	—

How Do You Study?

Sitting at neat desk	—
Sitting at cluttered desk	—
Sitting on the floor	—

Appendix J (continued)
Study Habits Inventory (continued)

Sitting on the bed
Sitting in easy chair   ___
Ceiling lamp on   ___
Desk lamp on   ___
Floor lamp on behind on left   ___
Materials handy   ___
Dictionary there   ___

What Is Going On Around You? (Distractions)

Telephone in room   ___
Telephone close by   ___
Television in room   ___
Television on in room   ___
Radio in room   ___
Radio on in room   ___
Television on close by   ___   ___   ___
Radio on close by   ___   ___   ___
Refrigerator close by   ___   ___   ___
Conversations heard f   ___   ___   ___
Outside noises heard   ___   ___   ___
Room faces a main street   ___   ___   ___
Visitors   ___   ___   ___

What Is Going On Inside Your Mind?

I read one line over and over   ___
I take a long time to do reading assignments   ___
I take a long time to settle down   ___
My mind wanders   ___
I am easily distracted by noise   ___

How Often Do You Have Homework?

Appendix K

Name:................................. Date:...
Please fill this sheet on the days you have a study session

Study session start time:_____
Study session end time:_____

Please indicate the activities that your study session involved.

Planning study session   ☐
Reading   ☐
Note taking   ☐
Distractions   ☐
Breaks   ☐ → Number and duration:_____
Reviewing lecture notes   ☐

These are the definitions of the activities we have chosen to measure:

1) **Number of pages read**: Each page counted should be a page of typed/written text. Pages that include only figures or graphs do not count. You should estimate how much text you cover once you account for included tables/figures/pictures

2) **Note taking**: Please keep track of the notes you make and hand them in to the researcher.

3) **Number of times distracted**: This refers to the number of times you were distracted by the phone, the radio, the TV, friends, you reached a mental block, or your mind wandered.

Activity		Anxiety level for whole period (1-10, with 10 being the highest))	Any anxious thoughts during period
Number of pages read			
Note taking 1. Number of lines			
2. Number of words per line			
Number of times distracted			

Appendix L
Client Consent form

This study in which you are about to participate is designed to investigate on-line counselling and is being conducted by Anoushka Candappa, a masters student in psychology. This experiment conforms to the guidelines produced by the Edith Cowan University, Committee for the Conduct of Ethical Research.

In this experiment you will undergo 6 counselling sessions lasting ½-1hour with the researcher, Anoushka Candappa. At the end of each these sessions you will be asked to fill in a form about your impressions of the session (3mins). You will also be asked to monitor yourself on a weekly basis (5mins) and fill out some scales that measure your moods each fortnight (5mins). The study also requires that a trusted family member or friend monitor your stress levels each week (5mins).

Pleased be assured that any information that you provide will be held in strict confidence by the researcher. Your counsellor will not know about your impressions of each session until after the study is completed. When data is reported code names will be used that will prevent you from being identified as a participant (e.g. "client XZ"). At the conclusion of the study a report of the results will be available upon request.

Please understand that your participation in this research is totally voluntary and you are free to withdraw at any time during this study without penalty, and remove any data that you may have contributed.

Any questions concerning this project should be directed to Anoushka Candappa (principal Investigator) on (08) 94005853 or at; anoushkac@hotmail.com. Alternatively contact Dr. Lu Arco (supervisor) on (08) 94005192.

I ……………………………………….. have read the information above and any questions I have asked have been answered to my satisfaction. I agree to participate in this activity, realising that I may withdraw at any time. I agree that research data gathered for the study may be published, provided I am not identifiable.

………………………………….   …………………
Participant/authorised representative   date

………………………………….   …………………
Investigator   date

Appendix M

Confidentiality Form for Independent Assessor

This study in which you are about to participate is designed to investigate on-line counselling and is being conducted by Anoushka Candappa, a masters student in psychology. This experiment conforms to the guidelines produced by the Edith Cowan University, Committee for the Conduct of Ethical Research.

Your task will involve monitoring your friend/family member each week to record his/her anxiety levels and send the recording form back to the researcher. This should take up five minutes of your time. Please understand that the information you record is confidential and you should not discuss it with any one.

Please do not hesitate to contact the principal researcher if you have any questions at 94005853 or anoushkac@hotmail.com

Please understand that your participation in this research is totally voluntary and you are free to withdraw at any time during this study without penalty, and remove any data that you may have contributed.

I .... have read the information above and any questions I have asked have been answered to my satisfaction. I agree to participate in this activity, realising that I may withdraw at any time. I agree that research data gathered for the study by myself may be published, provided I am not identifiable.

....
Participant/authorised representative   date

....
Investigator   date

Appendix N
Cornell Template

Cue Column

Source of reading: _____

Summary column

Appendix O

Requirements for linear sequential note taking (Cornell Style)

1. Use a shorthand system and abbreviations. (1 point).
2. Note the author and title of the book, ie the source of your information at the top of the page. (1 point)
3. Avoid whole sentences, except when you are quoting. (1 point).
4. Use only one side of paper. (1 Point)
5. Use main headings and sub-headings; never have more than 1/3 of a page without headings/ sub headings. (2 points; 1 point if there is more than a page without a subheading).
6. Use indentation. (1 point)
7. Number the pages. (1 Point)
8. Have a wide margin on the left hand (cue column). (1 point)
9. Have a wide margin at the bottom of the page (summary space). (1 point)
10. Use the cue column to write questions that clarify meaning, reveal relationship, establish continuity. (1 point)
11. Use the summary space to sum up each page of notes in a sentence or two. This helps avoid over focus on the specifics. (1 point)
12. In the main body of you notes page focus on ideas presented and not on the words. (1 point)

<u>SQ3R - A READING/STUDY SYSTEM</u>

SURVEY - gather the information necessary to focus and formulate goals.

1. Read the title - help your mind prepare to receive the subject at hand.
2. Read the introduction and/or summary - orient yourself to how this chapter fits the author's purposes, and focus on the author's statement of most important points.
3. Notice each boldface heading and subheading - organize your mind before you begin to read - build a structure for the thoughts and details to come.
4. Notice any graphics - charts, maps, diagrams, etc. are there to make a point - don't miss them.
5. Notice reading aids - italics, bold face print, chapter objective, end-of -chapter questions are all included to help you sort, comprehend, and remember.

QUESTION - help your mind engage and concentrate.

One section at a time, turn the boldface heading into as many questions as you think will be answered in that section. The better the questions, the better your comprehension is likely to be. You may always add further questions as you proceed. When your mind is actively searching for answers to questions it becomes engaged in learning.

READ - fill in the information around the mental structures you've been building.

Read each section (one at a time) with your questions in mind. Look for the answers, and notice if you need to make up some new questions.

RECITE - retain your mind to concentrate and learn as it reads.

After each section - stop, recall your questions, and see if you can answer them from memory. If not, look back again (as often as necessary) but don't go on to the next section until you can recite.

REVIEW - refine your mental organization and begin building memory.

Once you've finished the entire chapter using the preceding steps, go back over all the questions from all the headings. See if you can still answer them. If not, look back and refresh your memory, then continue.

REMEMBER: THE INFORMATION YOU GAIN FROM READING IS IMPORTANT. IF YOU JUST "DO IT" WITHOUT LEARNING SOMETHING. YOU'RE WASTING A LOT OF TIME. TRAIN YOUR MIND TO LEARN!!!

SUGGESTIONS FOR IMPROVING READING SPEED

Improvement of Reading Rate

It is safe to say that almost anyone can double his speed of reading while maintaining equal or even higher comprehension. In other words, anyone can improve the speed with which he gets what he wants from his reading. The average college student reads between 250 and 350 words per minute

on fiction and non-technical materials. A "good" reading speed is around 500 to 700 words per minute, but some people can read a thousand words per minute or even faster on these materials. What makes the difference? There are three main factors involved in improving reading speed: (1) the desire to improve, (2) the willingness to try new techniques and (3) the motivation to practice.

Learning to read rapidly and well presupposes that you have the necessary vocabulary and comprehension skills. When you have advanced on the reading comprehension materials to a level at which you can understand college-level materials, you will be ready to speed reading practice in earnest.

The Role of Speed in the Reading Process

Understanding the role of speed in the reading process is essential. Research has shown a close relation between speed and understanding. For example, in checking progress charts of thousands of individuals taking reading training, it has been found in most cases that an increase in rate has been paralleled by an increase in comprehension, and that where rate has gone down, comprehension has also decreased. Although there is at present little statistical evidence, it seems that plodding word-by-word analyzation (or word reading) inhibits understanding. There is some reason to believe that the factors producing slow reading are also involved in lowered comprehension. Most adults are able to increase their rate of reading considerably and rather quickly without lowering comprehension. These same individuals seldom show an increase in comprehension when they reduce their rate. In other cases, comprehension is actually better at higher rates of speed. Such results, of course, are heavily dependent upon the method used to gain the increased rate. Simply reading more rapidly without actual improvement in basic reading habits usually results in lowered comprehension.

Factors that Reduce Reading Rate

Some of the facts which reduce reading rate: (a) limited perceptual span i.e., word-by-word reading; (b) slow perceptual reaction time, i.e., slowness of recognition and response to the material; (c) vocalization, including the need to vocalize in order to achieve comprehension; (d) faulty eye movements, including inaccuracy in placement of the page, in return sweep, in rhythm and regularity of movement, etc.; (e) regression, both habitual and as associated with habits of concentration; (f) faulty habits of attention and concentration, beginning with simple inattention during the reading act and faulty processes of retention; (g) lack of practice in reading, due simply to the fact that the person has read very little and has limited reading interests so that very little reading is practiced in the daily or weekly schedule; (h) fear of losing comprehension, causing the person to suppress his rate deliberately in the firm belief that comprehension is improved if he spends more time on the individual words; (i) habitual slow reading, in which the person cannot read faster because he has always read slowly, (j) poor evaluation of which aspects are important and which are unimportant; and (k) the effort to remember everything rather than to remember selectively.

Since these conditions act also to reduce comprehension increasing the reading rate through eliminating them is likely to result in increased comprehension as well. This is an entirely different matter from simply speeding up the rate of reading without reference to the conditions responsible for the slow rate. In fact, simply speeding the rate especially through forced acceleration, may actually result, and often does, in making the real reading problem more severe. In addition, forced acceleration may even destroy confidence in ability to read. The obvious solution, then is to increase rate as a part of a total improvement of the whole reading process. This is a function of special training programs in reading.

Appendix P (continued)

Basic Conditions for Increased Reading Rate

A well planned program prepares for maximum increase in rate by establishing the necessary conditions. Four basic conditions include:

1. Have your eyes checked. Before embarking on a speed reading program, make sure that any correctable eye defects you may have are taken care of by checking with your eye doctor. Often, very slow reading is related to uncorrected eye defects.

2. Eliminate the habit of pronouncing words as you read. If you sound out words in your throat or whisper them, you can read slightly only as fast as you can read aloud. You should be able to read most materials at least two or three times faster silently than orally. If you are aware of sounding or "hearing" words as you read, try to concentrate on key words and meaningful ideas as you force yourself to read faster.

3. Avoid regressing (rereading). The average student reading at 250 words per minute regresses or rereads about 20 times per page. Rereading words and phrases is a habit which will slow your reading speed down to a snail's pace. Usually, it is unnecessary to reread words, for the ideas you want are explained and elaborated more fully in later contexts. Furthermore, the slowest reader usually regresses most frequently. Because he reads slowly, his mind has time to wander and his rereading reflects both his inability to concentrate and his lack of confidence in his comprehension skills.

4. Develop a wider eye-span. This will help you read more than one word at a glance. Since written material is less meaningful if read word by word, this will help you learn to read by phrases or thought units.

Rate Adjustment

Poor results are inevitable if the reader attempts to use the same rate indiscriminately for a-1 types of material and for all reading purposes. He must learn to adjust his rate to his purpose in reading and to the difficulty of the material he is reading. This ranges from a maximum rate on easy, familiar, interesting material or in reading to gather information on a particular point, to minimal rate on material which is unfamiliar in content and language structure or which must be thoroughly digested. The effective reader adjusts his rate; the ineffective reader uses the same rate for all types of material. Rate adjustment may be overall adjustment to the article as a whole, or internal adjustment within the article. Overall adjustment establishes the basic rate at which the total article is read; internal adjustment involves the necessary variations in rate for each varied part of the material. As an analogy, you plan to take a 100-mile mountain trip. Since this will be a relatively hard drive with hills, curves, and a mountain pass, you decide to take three hours for the total trip, averaging about 35 miles an hour. This is your overall rate adjustment. However, in actual driving you may slow down to no more than 15 miles per hour on some curves and hills, while speeding up to 50 miles per hour or more on relatively straight and level sections. This is your internal rate adjustment. There is no set rate, therefore, which the good reader follows inflexibly in reading a particular selection, even though he has set himself an overall rate for the total job.

Overall rate adjustment should be based on your reading plan, your reading purpose, and the nature and difficulty of the material. The reading plan itself should specify the general rate to be used. This is based on the total "size

Appendix P (continued)

up". It may be helpful to consider examples of how purpose can act to help determine the rate to be used. To understand information, skim or scan at a rapid rate. To determine value of material or to read for enjoyment, read rapidly or slowly according to you feeling. To read analytically, read at a moderate pace to permit interrelating ideas. The nature and difficulty of the material requires an adjustment in rate in conformity with your ability to handle that type of material. Obviously, level of difficulty is highly relative to the particular reader. While Einstein's theories may be extremely difficult to most laymen, they may be very simple and clear to a professor of physics. Hence, the layman and the physics professor must make a different rate adjustment in reading the same material. Generally, difficult material will entail a slower rate; simpler material will permit a faster rate.

Internal rate adjustment involves selecting differing rates for parts of a given article. In general, decrease speed when you find the following (1) unfamiliar terminology not clear in context. Try to understand it in context at that point; otherwise, read on and return to it later; (2) difficult sentence and paragraph structure; slow down enough to enable you to untangle them and get accurate context for the passage; (3) unfamiliar or abstract concepts. Look for applications or examples of you own as well as studying those of the writer. Take enough time to get them clearly in mind; (4) detailed, technical material. This includes complicated directions, statements of difficult principles, materials on which you have scant background; (5) material on which you want detailed retention. In general, increase speed when you meet the following: (a) simple material with few ideas which are new to you; move rapidly over the familiar ones; spend most of your time on the unfamiliar ideas; (b) unnecessary examples and illustrations. Since these are included to clarify ideas, move over them rapidly when they are not needed; (c) detailed explanation and idea elaboration which you do not need. (d) broad, generalized ideas and ideas which are restatements of previous ones. These can be readily grasped, even with scan techniques.

In keeping your reading attack flexible, adjust your rate sensitivity from article to article. It is equally important to adjust you rate within a given article. Practice these techniques until a flexible reading rate becomes second nature to you.

Summary

In summary, evidence has been cited which seems to indicate a need for and value of a rapid rate of reading, while at the same time indicating the dangers of speed in reading, as such. We have attempted to point out the relationship between rate of reading and extent of comprehension, as well as the necessity for adjustment of reading rate, along with whole reading attack, to the type of material and the purposes of the reader. Finally, the factors which reduce rate were surveyed as a basis for pointing out that increase in rate should come in conjunction with the elimination of these retarding aspects of the reading process and as a part of an overall reading training program where increase in rate is carefully prepared for in the training sequence.
Adapted by permission of RSSL, University of Maryland.
From: Cook Counselling Center, (2000).

INFORMATION FOR AUTHORS

Behavior Therapy is an international journal devoted to the application of behavioral and cognitive sciences to clinical problems. It primarily publishes original research of an experimental/clinical nature which contributes to the theories, practices, and evaluations of behavior therapy, broadly defined [see Editorial, *Behavior Therapy*, 1990, 21, pp. 1-2]. Although the major emphasis is placed upon empirical research, methodological and theoretical papers as well as evaluative reviews of the literature will also be published. Case studies, where the interventions have not been evaluated experimentally, and clinical replication series will be published [see Announcement, *Behavior Therapy*, 1990, 27, pp. 4-5]. The format for publication includes articles, case studies, the clinical replication series, and letters to the Editor concerning issues raised in manuscripts previously published in *Behavior Therapy*.

Manuscripts may be submitted to the Editor, David A. F. Haaga, Department of Psychology, Asbury Building, American University, Washington, DC 20016-8062.

All manuscripts should be prepared in conformity with the format described in the *Publication Manual of the American Psychological Association*, Fourth Edition (1994), and it is the responsibility of the author that manuscripts adhere to the format and other requirements of *Behavior Therapy*. The activities described in manuscripts published in the journal should be consistent with the generally accepted standards of ethical practice.

Submit five complete copies of the manuscript in order to expedite editorial processing. Each copy must include all figures and tables. Glossies of the figures should not be submitted with the manuscript. These will be requested later in the event that the manuscript is accepted for publication. Only original papers will be considered. Manuscripts are accepted for review with the understanding that the same work has not been and will not be published — nor is presently submitted — elsewhere; and that all persons listed as authors have given their approval for the submission of the paper; further, that any person cited as a source of personal communications has approved such citation. Written authorization may be required at the Editor's discretion.

Articles and any other material published in *Behavior Therapy* represent the opinions of the author(s) and should not be construed as reflecting the opinions of the Editors or the Association. Authors submitting a manuscript do so on the understanding that if it is accepted for publication, copyright in the article, including the right to reproduce the article in all forms and media, shall be assigned exclusively to the Association. The Association will not refuse any reasonable request by the author for permission to reproduce any of his or her contributions to the journal.

Proofs. Proofs will be sent to the author. Authors are responsible for correcting the proofs of their articles. Authors will be charged for changes (other than corrections of printing errors) in excess of 10% of the cost of composition.

Reprints. Reprint order forms will accompany proofs. Twenty-four reprints without covers will be provided for each article and sent on the author's behalf to colleagues outside of AABT. Inc. (Operations Staff, P.O. Box 765, Schenectady, New York 12301, for copying beyond that permitted by Sections). Additional reprints may be ordered on the form accompanying the proofs.