

EFFECTS OF CHAT-BASED ON-LINE COGNITIVE BEHAVIOR THERAPY ON STUDY RELATED BEHAVIOR AND ANXIETY

Anoushka Rassau and Lucius Arco

Edith Cowan University, Perth, Australia

Abstract. The aim of this study was to examine effects of chat-based on-line CBT on a university student's study related behavior and anxiety. The study used a single participant multiple baseline design across three self-recorded behaviors consisting of hours of study, number of pages read, and note-taking quality, accompanied by recordings of daily anxiety levels. After baseline, the participant received 6 × 45 min weekly chat-based on-line sessions of CBT. Results show that the three study behaviors increased, and anxiety decreased. These results appear comparable with those of conventional face-to-face CBT for similar problems, suggesting that chat-based on-line CBT may be an alternative for clients with accessibility or anonymity concerns.

Keywords: Chat-based Internet treatment, study related anxiety.

Introduction

Cognitive behavior therapy (CBT) via the Internet is showing considerable promise. Clients who do not require therapist contact can access effective self-help programs on web-sites (e.g. Klein & Richards, 2001), while those who require regular therapist contact can now access chat-based on-line arrangements in which therapists and clients exchange written communication in synchronous time. However, appealing as chat-based therapy is, there are few studies of its efficacy. A notable study was that of Cohen and Kerr (1998), who showed that a single session of chat-based therapy was as effective as a single session of face-to-face therapy in reducing anxiety of university students. However, observations were only taken immediately after the single session, with no follow-up observations.

On the other hand, multiple sessions of conventional face-to-face CBT can clearly reduce study related problems (e.g. Sanghvi, 1995; Vagg & Papsdorf, 1995), but it remains to be shown whether these results are replicable over the Internet. The aim of the present study was to examine effects of a more conventional CBT delivered via chat-based Internet on a student's study related behavior and anxiety.

Reprint requests and requests for extended report to Lucius Arco, School of Psychology, Edith Cowan University, Joondalup, WA 6027, Australia. E-mail: l.arco@cowan.edu.au An extended version is also available online in the table of contents for this issues: http://journals.cambridge.org/jid_BCP

© 2003 British Association for Behavioural and Cognitive Psychotherapies

Method

Participants and setting

The participant was a female first year undergraduate social sciences student, 22 years of age, who was single and lived in shared student accommodation on campus. The participant was the first interviewed student who met selection requirements including presentation of problematic study behavior, trait anxiety not exceeding moderate levels, and was comfortable and competent in using the Internet. The researcher (the first author), who was a post-graduate clinical psychology student, served as the therapist, and linked with the participant on a university private Internet terminal once a week at an agreed time.

Measures

The participant obtained self-recording forms (available from authors) from her on-campus mailbox and returned completed forms before each on-line therapy session. The following were self-recorded.

Study behaviors. Daily levels of three study behaviors were recorded, each defined as follows: (a) Hours of study per day, calculated by recording starting and finishing times of study sessions each day; (b) Daily number of pages read (excluding pictures and graphs) during study sessions; and (c) Daily points for note-taking quality, using the Cornell method (see Pauk, 1993). The participant's note-taking was examined and points were assigned for observations that corresponded with the 13 characteristics of the Cornell criteria, including use of subheadings, clarifying questions, and summarizing each page of notes into one or two sentences. A maximum score of 13 was possible. Scores from 1–5 indicated low quality of notes, 6–9 indicated moderate quality, and scores 10–13 indicated high quality of notes.

Anxiety ratings. The participant rated her anxiety after completion of each study session using a scale of 1–10, with 1–3 indicating low anxiety, 4–7 indicating moderate anxiety, and 8–10 indicating high anxiety, and averaged the ratings each day.

Design and procedure

Observations over 57 days commenced at the start of the academic semester. A single participant multiple baseline design across study behaviors with changing criterion for two behaviors (Hours of study, and Number of pages read) was used. Procedures were as follows.

Baseline. During this phase the participant did not meet with the researcher on the Internet. Instructions for recording the study behaviors and anxiety were given at the earlier selection interview.

On line CBT. Researcher and participant interacted during 6×45 min weekly on-line sessions, which aimed at advising the participant on the following: (a) how anxiety occurs, and its connection to antecedents, thoughts, and consequences; (b) basics of CBT; (c) how to set study goals and strategies, and self-evaluate behavior; and (d) basic strategies for reducing study-related distractions and anxiety.

Results

Figure 1 shows daily levels of the three targeted study behaviors across baseline and on-line CBT. During baseline, Behaviors 1 (Hours of study) and 2 (Number of pages read) were variable, without trend, at averages of 0.43 hours and 8.5 pages read per day, respectively. Behavior 2 showed a sudden increase on Day 21, the day before an assignment was due, after which behavior decreased to previous levels. Behavior 3 (Points for note-taking quality) showed low variability, no trend, with a daily average of 0.8 points.

During on-line CBT, Behavior 1 was variable at an average of 1.5 hours per day for the period to Day 24, which included the assignment deadline on Day 22. Subsequently, stable study hours were observed at an average of 0.5 hours per day for at least 6 days, which was the set criterion (criterion levels are indicated by horizontal lines in Figure 1). From Days 39 to 49, Behavior 1 increased to a stable average of 1.5 hours per day (criterion was 1.5 hours for at least 6 days). From Days 50 to 57, behavior increased to an average of 5.2 hours per day, with an initial increasing trend, followed by a decreasing trend (criterion was at least 4 hours per day for 6 days).

Behavior 2 showed stable increases in levels corresponding with the increasing criteria. From Days 28 to 39, the average was 6.2 pages per day (criterion was 6 pages per day for 6 days). From Days 40 to 49, average was 12.5 pages per day (criterion was 12 pages per day for 6 days). From Days 49 to 57, average was 45.1 pages per day (criterion was at least 40 pages per day for 6 days).

Behavior 3 (Points for note-taking quality) showed a sharp increase to an average of 7.4 points. This met the criterion of at least 6 points per day for 6 days.

Figure 2 shows average daily anxiety ratings during baseline and on-line CBT. During baseline there was an increasing trend in anxiety ratings from 2 to 7 (average of 5.8). With on-line CBT, anxiety ratings remained at an average of 5.6 until Day 22, followed by ratings decreasing to 1 on Day 26. From Day 26 to Day 35 there was an upward trend to a score of 6, after which ratings settled at an average of 3.9 through to Day 57. Trait-anxiety scores were unchanged at 36 before therapy and at posttherapy, which were within the average range expected for university students.

Discussion

The results show that chat-based on-line CBT increased a range of positive study behaviors, accompanied by a decrease in anxiety to moderate and stable levels. A clear functional relationship between on-line CBT and the three study behaviors was observed, although stable change in Hours of study was delayed, probably related to the first assignment due soon after therapy began. The assignment may have contributed to increase in Hours of study that overly exceeded the set criterion. However, the subsequent two assignments did not appear to have had similar effects on Hours of study, Number of pages read, or anxiety. This suggests that on-line CBT effectively achieved desired and stable patterns of study behavior that did not necessitate last minute study, nor increase anxiety prior to assignments being due. The efficacy of on-line CBT is also highlighted by the observation that while Hours of study and Number of pages read showed high increases prior to Day 22, Number of pages read returned to baseline levels after Day 22, whereas Hours of study, which was intervened on, remained at criterion levels. Number of pages read did not meet criterion until targeted for intervention.

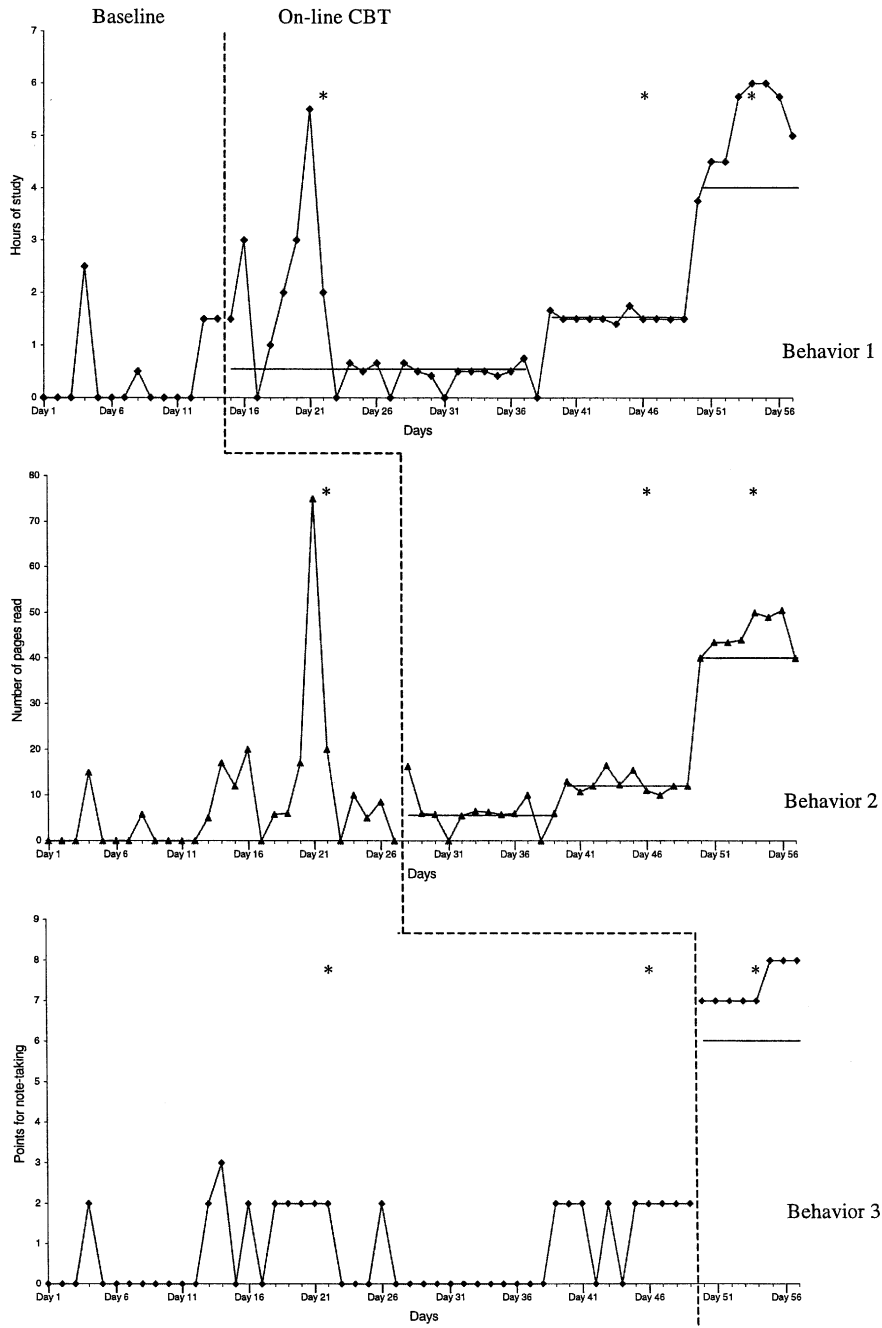


Figure 1. Participant’s study behaviors across baseline and on-line CBT. Assignment due dates are indicated by asterisks

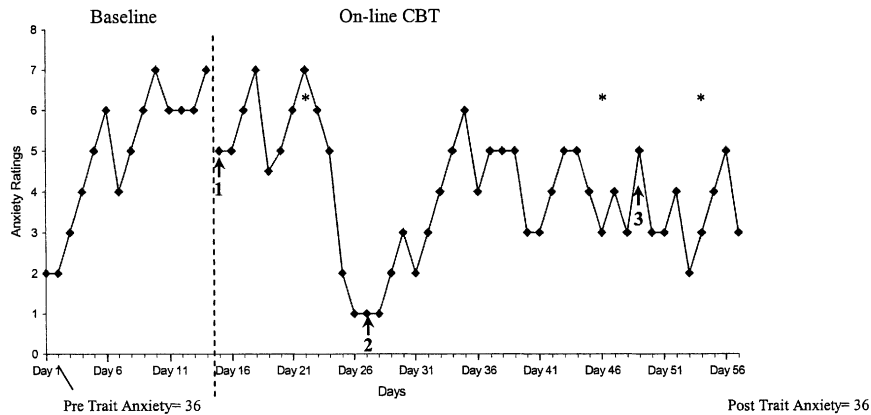


Figure 2. Participant's average daily anxiety ratings across baseline and on-line CBT. Arrows indicate when study behaviors 1, 2, and 3 were targeted for intervention. Assignment due dates are indicated by asterisks, and pre- and posttrait anxiety scores are shown below the figure

Results of the present study extend those of Cohen and Kerr (1998) by showing positive effects on a range of study behaviors, as well as reduced anxiety, over a two month period. Furthermore, the results appear comparable with those of conventional CBT studies of clients with moderate trait anxiety and similar study related problems. Future studies should directly compare interventions similar to that of the present study with more conventional CBT.

In particular, chat-based on-line CBT appears a promising alternative for students who seek assistance for study related problems, but have difficulties accessing face-to-face services, or who prefer more anonymous assistance.

Acknowledgement

This report is based on the first author's research in partial fulfillment of the requirements for the Master of Psychology (Clinical) degree at Edith Cowan University. The authors wish to thank Alex Rassau for his invaluable assistance in drafting the graphs for this report.

References

- 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.
- KLEIN, B., & RICHARDS, J. C. (2001). A brief Internet-based treatment for panic disorder. *Behavioural and Cognitive Psychotherapy, 29*, 113–117.
- PAUK, W. (1993). *How to study in college* (5th ed.). Boston: Houghton Mifflin.
- SANGHVI, C. (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.
- 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* (pp. 183–194). Washington, DC: Taylor and Francis.

