



Guided internet-delivered acceptance and commitment therapy for chronic pain patients: A randomized controlled trial



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ABSTRACT

Acceptance and commitment therapy (ACT) interventions for persons with chronic pain have recently received empirical support. ACT focuses on reducing the disabling influences of pain through targeting ineffective control strategies and teaches people to stay in contact with unpleasant emotions, sensations, and thoughts. The aim of the present study was to investigate the effect of a guided internet-delivered ACT intervention for persons with chronic pain. A total of 76 patients with chronic pain were included in the study and randomized to either treatment for 7 weeks or to a control group that participated in a moderated online discussion forum. Intent-to-treat analyses showed significant increases regarding activity engagement and pain willingness. Measurements were provided with the primary outcome variable Chronic Pain Acceptance Questionnaire which was in favour of the treatment group. Reductions were found on other measures of pain-related distress, anxiety and depressive symptoms. A six month follow-up showed maintenance of improvements. We conclude that an acceptance based internet-delivered treatment can be effective for persons with chronic pain.

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Introduction

For many individuals chronic pain has adverse consequences on daily activity, employment, relationships, and emotional functioning (Breivik, Collett, Ventafridda, Cohen & Gallcher, 2006). Several studies have investigated the prevalence of chronic pain among adults. Results show that 15–20 percent of adults experience chronic pain. Considering all sources of expenditures, chronic pain has a large financial impact on society (Breivik et al., 2006).

Chronic pain is a demoralizing situation that compromises all aspects of the person's life, including disability and emotional distress. Psychological research has identified the central role of cognitive, behavioural and emotional factors contributing to the perpetuation of chronic pain (Kerns, Sellinger, & Goodin, 2011). Cognitive-behavioural therapy (CBT) delivered in a multidisciplinary setting has been shown in several controlled studies to be effective in the treatment of chronic pain (e.g. Hoffman, Papas,

Chatkoff, & Kerns, 2007; Morley, Eccleston, & Williams, 1999). A common factor for the psychologically oriented interventions for chronic pain is that the focus is on the consequences that pain has on one's life, rather than on pain intensity, as a way of directly addressing adaptive behavioural change (Kerns et al., 2011).

In the so called third generation of cognitive behavioural treatments, e.g. acceptance and commitment therapy (ACT), function is emphasized in contrast to form. Behaviour is analysed from a functional perspective, i.e. the aim is to understand why a particular behaviour is maintained rather than describing what kind of behaviour a person performs. In order to understand how influence can affect the function of behaviour it is important to alter the social/verbal context through identification of basic processes that are common across settings (Hayes, Luoma, Bond, Masuda, & Lillis, 2006; Hayes, Strosahl, & Wilson, 1999). From this perspective, chronic pain can be viewed as an experiential avoidance disorder. Experiential avoidance has been defined as attempts to avoid thoughts, feelings, memories, physical sensations, and other internal experiences, which often creates suffering in the long-run (McCracken, Vowles, & Eccleston, 2004; Vowles & McCracken, 2010). Studies have shown that experiential avoidance is associated with higher pain intensity,

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pain-related anxiety, depression and physical and psychosocial disability (Feldner et al., 2006; McCracken, 1998; McCracken & Vowles, 2006). These results suggest that acceptance of pain and a willingness to abandon the struggle to avoid or reduce pain, will enable the individual to be more present in the moment. Mindfulness exercises, have its roots in Asian religious traditions, help the individual to fully experience the phenomenon in the present moment without the influence of verbal content (Fletcher & Hayes, 2005). Being present in the moment will help the individual distancing from pain-related thoughts and acting in accordance with chosen values (McCracken, 1998; McCracken & Eccleston, 2003; McCracken & Vowles, 2006; McCracken et al., 2004; Wetherell et al., 2011).

A systematic review showed that acceptance based therapies could be an alternative to CBT although the researchers stated that more controlled studies are needed (Veehof, Oskam, Schreurs & Bohlmeijer, 2011). The review included seven ACT-studies and fifteen mindfulness-based stress reduction (MBSR) programs. In addition, ACT has been listed as an empirically supported treatment for chronic pain and depression (APA, 2006/2011).

There are many obstacles for persons with chronic pain to seek or receive adequate help such as, financial barriers, reluctance to seek treatment, and paucity of clinicians trained in CBT (including evidence-based multidisciplinary treatment options) (Jamison, Gintener, Rogers, & Fairchild, 2002). The use of internet as a delivery format for CBT interventions could be a way to overcome many of these barriers. Internet-delivered cognitive behaviour therapy (ICBT) has proved effective for various conditions both in the physical and mental health domains (Andersson et al., 2008; Barak, Hen, Boniel-Nissim, & Shapira, 2008; Cuijpers, van Straten, & Andersson, 2008). Some of the advantages with internet-based treatments are: reducing therapist time and waiting lists, allowing patients to work in their own pace, no need for scheduling with a therapist, availability to a greater number of patients and cost-effectiveness (Cuijpers et al., 2008).

In the field of pain, several internet-based treatments have been developed (Bender, Radhakrishnan, Diorio, Englesakes & Jadad, 2011; Macea, Gajos, Daglia-Calil, & Fregni, 2010). These have mainly concerned CBT and participants have been recruited through newspaper advertisements (Brattberg, 2006; Buhrman, Fältenhag, Ström, & Andersson, 2004; Buhrman, Nilsson-Ihrfelt, Jannert, Ström, & Andersson, 2011; Carpenter, Stoner, Mundt, & Stoelb, 2012; Ruhlman, Karoly, & Enders, 2012). One study showed that a self-help intervention based on ACT for chronic pain was superior to applied relaxation. The participants in that study received one face-to-face session and a self-help manual with reading instructions including a CD with exercises (Thorsell et al., 2011). Even though there have been ACT elements in some of these studies there is no study on internet-based ACT for chronic pain to date in use.

The purpose of the present study was to investigate if a guided internet-based ACT intervention could help chronic pain patients. Participants were recruited from a clinical setting. The active treatment group was compared to a moderated online discussion forum which has been used as an active intervention in previous studies (e.g. Lorig et al., 2002).

Methods

Recruitment procedure and inclusion

All participants were recruited from the Pain Center at the Uppsala University hospital in Sweden. The patients had undergone a medical examination but had not received any multidisciplinary rehabilitation. Information about the present study was sent to 273 patients from the patient register. The letter also informed the

patients that they would be contacted via telephone and that they could decline participation without being further contacted. The patients were contacted by telephone in order to find out if they were interested in participating in the present study and if they were able to schedule a time for a screening interview. The screening interview was structured, conducted over the telephone and lasted for approximately 30 min. The telephone interview was done in order to screen the participants for possible complications and suitability for the study. The screening interview included questions on perceived discomfort level, pain intensity, pain duration, previous contact with the health care system, psychiatric and other somatic disorders, and information about the study.

Inclusion criteria required that participants had undergone medical investigation (within one year), had regular access to the internet and had functional impairment caused by chronic pain. Functional impairment was assessed in the structured telephone interview by asking the patients about functional level in their daily life. Exclusion criteria consisted of patients with ongoing medical investigations or treatment that could interfere with participation in the study, such as planned surgery and suffering from acute physical or psychiatric conditions. In addition, participants had to be fluent in the Swedish language.

After the telephone interview, 76 patients remained and were randomized to either the treatment ($n = 38$) or to the control group ($n = 38$). Randomization was made by an independent person using a true random number service (www.randomizer.org). Participants were informed of which group they had been randomly assigned to. Prior to randomization participants were informed that they would be randomized to either group 1 (the treatment group) or group 2 (the control condition). Group 1 was described as an internet-based treatment for chronic pain based on CBT that would last for seven weeks and group 2 as an online discussion forum for chronic pain with a similar duration. They were also told that group 2 would be offered the internet-based treatment after approximately seven weeks. Participants were also informed at this stage that participation was voluntary and could be disrupted whenever they chose to. Furthermore, they received information about confidentiality and that no compensation for participation or internet connection would be given. This information was given verbally and in writing. Participants were asked to sign and send in an informed consent. The study was approved by the regional ethical review board. The trial is also registered in clinicaltrials.gov (NCT01603797).

The majority of the participants were women in both groups and the age range was 27–69 years. There were no significant differences between treatment and control group with respect to age, pain duration or length in sick leave. There was a significant difference between the groups on educational level, $\chi^2(1) = 6.48$, $p = .01$, with the treatment group having higher educational level. More detailed information is presented in Fig. 1 and in Table 1. As seen in the table, a majority of the patients reported psychiatric problems of mild to moderate character (57.9%).

Intervention procedure

Following the screening interview, participants deemed eligible were asked to complete an assessment battery online. The participants were given a password and an unidentifiable username which gave them access to the questionnaires, the treatment program and therapist guidance. A computer technician for technical support was available if the participants encountered technical difficulties.

The therapists were graduate students in their last term of a five year clinical psychology program, and were trained in CBT including supervision of therapeutic work. They received weekly supervision by a clinical psychologist. All correspondence concerning treatment

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