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## Randomised controlled trial of a guided self-help treatment on the Internet for binge eating disorder

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### ABSTRACT

Binge eating disorder (BED) is a common and under-treated condition with major health implications. Cognitive behavioural therapy (CBT) self-help manuals have proved to be efficient in BED treatment. Increasing evidence also support the use of new technology to improve treatment access and dissemination. This is the first randomised controlled study to evaluate the efficacy of an Internet guided self-help treatment programme, based on CBT, for adults with threshold and subthreshold BED. Seventy-four women were randomised into two groups. The first group received the six-month online programme with a six-month follow-up. The second group was placed in a six-month waiting list before participating in the six-month intervention. Guidance consisted of a regular e-mail contact with a coach during the whole intervention. Binge eating behaviour, drive for thinness, body dissatisfaction and interoceptive awareness significantly improved after the Internet self-help treatment intervention. The number of objective binge episodes, overall eating disorder symptoms score and perceived hunger also decreased. Improvements were maintained at six-month follow-up. Dropouts exhibited more shape concern and a higher drive for thinness. Overall, a transfer of CBT-based self-help techniques to the Internet was well accepted by patients, and showed positive results for eating disorders psychopathology.

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#### Introduction

Binge eating disorder (BED) is characterised by recurrent episodes of binge eating with a sense of loss of control and a marked distress, without the inappropriate compensatory behaviour observed in bulimia nervosa. BED appears to be a stable condition, more common than bulimia nervosa or anorexia nervosa (Hudson, Hiripi, Pope, & Kessler, 2007), with a raising prevalence. For instance, community surveys conducted in South Australia inferred an over twofold increase in the prevalence of binge eating between 1995 and 2005 (Hay, Mond, Buttner, & Darby, 2008).

BED represents a serious public health problem (Hudson et al., 2007). It is often associated with obesity, psychological impairment and a lower quality of life (Grucza, Przybeck, & Cloninger,

2007). A recent study found that 70% of individuals with BED in a community sample were also obese, with 20% of people reporting a body mass index (BMI; weight in kg/height in m<sup>2</sup>) over 40 (Grucza et al., 2007). BED frequently occurs with mood and anxiety disorders, substance use disorders and a life history of suicide attempts. Studies showed that up to 74% of BED individuals reported additional life-time psychiatric disorders (Grilo, White, & Masheb, 2009; Grucza et al., 2007; Javaras et al., 2008; Wilfley, Wilson, & Agras, 2003).

BED and associated psychopathology can be effectively treated by cognitive behavioural therapy (CBT; Wilfley et al., 2002; Wilson, Wilfley, Agras, & Bryson, 2010). CBT for BED was also evaluated in self-help format, with results comparable to individual CBT or group therapy (Carter & Fairburn, 1998; Grilo & Masheb, 2005). In a recent meta-analysis, CBT delivered in structured self-help was observed to have larger effects on the reduction of binge eating frequency and associated symptoms, such as eating, weight and shape concerns compared to available psychological, pharmacological and weight-loss treatments for BED (Vocks et al., 2010). But it has also been repeatedly demonstrated that CBT had no effect on weight reduction even if most of the studies participants were

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obese (Vocks et al., 2010). Acceptance and efficacy of CBT-based guided self-help were also demonstrated in a primary care context, using a broader definition of eating disorders (Striegel-Moore et al., 2010). This study provided new findings in favour of the use of guided self-help as first line treatment, with a more adequate replication of the conditions found in clinical practice.

BED sufferers experience a limited access to treatment. The problem is under-treated and often not diagnosed. This might be due to a lack of information, and shame or denial on the part of the patients. Less than half of BED patients seek treatment for their eating disorder and BED is rarely screened by physicians (Crow, Peterson, Levine, Thuras, & Mitchell, 2004). Developing innovative treatment strategies, particularly using the latest information technology, could help promote treatment seeking and improve access to treatment (Bulik, Brownley, & Shapiro, 2007).

The benefits of delivering CBT-based intervention on CD-ROM or through the Internet have been demonstrated in several studies for bulimia nervosa. Clinical evaluations of an online-guided self-help programme for bulimia nervosa, conducted in four countries as part of the European research project SALUT, showed reduction of eating disorder symptoms and psychopathology from all four countries (Carrard et al., 2010, 2006; Fernandez-Aranda et al., 2009; Liwowsky, Cebulla, & Fichter, 2006; Nevonen, Mark, Levin, Lindstrom, & Paulson-Karlsson, 2006). A randomised controlled study of a three-month CD-ROM for bulimia nervosa suggested that providing guidance might increase adherence and benefits of computerised interventions (Schmidt et al., 2008). A subsequent randomised controlled trial within a student population of an Internet version of this CD-ROM, delivered with e-mail support. produced significant improvements on eating disorders psychopathology, affective symptoms and quality of life compared to a three-month waiting list (Sanchez-Ortiz et al., 2010).

Until recently, little has been done on technology-enhanced delivery of CBT-based interventions for BED. To our knowledge, only one study evaluated the use of a CD-ROM programme for BED and overweight patients. A randomised controlled trial comparing the efficacy of a ten-week CD-ROM intervention, a CBT group and a waiting list had comparable reduction in binge days between CBT group and CD-ROM, both interventions showing better results than a waiting list (Shapiro et al., 2007). However, conclusions of this study were limited by a high rate of dropout. Online programmes have mainly targeted weight loss or weight maintenance in overweight or obese patients (Tate, Jackvony, & Wing, 2006; Tate, Wing, & Winett, 2001) but BED, which is an eating disorder frequently found in people looking for weight loss (Spitzer et al., 1993), was not a direct focus. Only a single recent randomised controlled study evaluated an Internet intervention addressing binge eating and overweight in adolescents (Jones et al., 2008). This 16-week Internet programme, combining cognitive-behavioural principles for BED and weight loss intervention, had a significant effect on binge eating and weight maintenance simultaneously.

This paper reports the results of a randomised controlled study to evaluate the efficacy of an Internet guided self-help treatment programme for BED in a community sample. The programme is based on CBT, and targets behavioural and psychological aspects of BED such as loss of control on eating and shape and weight concerns. Obesity, weight loss and weight management were not addressed directly in the programme. We hypothesised that key outcome variables related to binge eating and eating disorder psychopathology of the Internet intervention group would improve compared to a control group, and that the Internet self-help treatment programme would have positive effects on depression, psychological health, self-esteem and quality of life. We also hypothesised that these improvements would be sustained at follow-up.

#### Method

#### Participants and recruitment

Recruitment started in 2008 and was done directly in the community through articles in a women's magazine and in pharmacy and physicians' newspapers. Links to information for the Internet self-help programme were added on two websites related to health. These advertisements proposed to women with compulsive eating to try a new Internet self-help treatment programme designed for BED. Only women were recruited because, in our experience, men appeared to enrol with more difficulties in studies on binge eating and it would not have been possible to balance the samples. Interested people could get information on the study by e-mail. The study protocol was then explained, notably that participants had to come to the University Hospitals of Geneva (Switzerland) for face-to-face evaluation sessions on three occasions during a year.

Participants included were women, between 18 and 60 years old, fluent in French, with average Internet skills and meeting full or subthreshold diagnostic criteria for BED according to DSM-IV (American Psychiatric Association, 1994). The criterion of binge frequency for subthreshold inclusion was at least one objective binge episode (OBE) a week for the last three months. The criterion of one binge episode a week was shown to adequately discriminate subthreshold BED subjects from the control population (Striegel-Moore, Wilson, Wilfley, Elder, & Brownell, 1998). Recent suicide attempt and past obesity surgery were exclusion criteria. Participants on antidepressant medication (N = 14) were required to have been stable on medication for a minimum of three months.

Of 160 respondents, eleven did not match the study inclusion criteria. Thirty-nine persons could not or did not want to come for face-to-face evaluation sessions and 24 were finally not interested. Experienced psychologists then interviewed the remaining 86 respondents. Of these, 10 were excluded because they did not meet threshold eating disorder criteria and two because they had had bariatric surgery. A total of 74 participants were randomised into two groups (see CONSORT diagram in Fig. 1).

#### Procedure and design

The presence of eating disorder was evaluated with the assistance of the EDO (*Eating Disorders in Obesity*) questionnaire (de Man Lapidoth, Ghaderi, Halvarsson-Edlund, & Norring, 2007). A French version of the questionnaire (Carrard & Crépin, 2007) was obtained after translation, back-translation and main author's approval. The EDO questionnaire is originally a self-report questionnaire based on DSM-IV diagnostic criteria for BED. But in the present study, the EDO was completed together with the assessor, to ensure a good understanding of questions and definitions. This was also a way to guarantee a standardization of the interview.

After the interview, included participants were randomised into one of two conditions:

- Internet Group: Participants assigned to the Internet Group received the Internet intervention immediately after first assessment. They had six months to complete the Internet guided self-help treatment programme and then a six-month follow-up period.
- Control Group: Participants assigned to the Control Group had a six-month waiting period. They received then the Internet self-help treatment for ethical reasons. They had six months to complete the programme.

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