



## Original article

# Cognitive behavioral therapy for compulsive buying behavior: Predictors of treatment outcome



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## ABSTRACT

**Background:** Compulsive buying behavior (CBB) is receiving increasing consideration in both consumer and psychiatric-epidemiological research, yet empirical evidence on treatment interventions is scarce and mostly from small homogeneous clinical samples.

**Objectives:** To estimate the short-term effectiveness of a standardized, individual cognitive behavioral therapy intervention (CBT) in a sample of  $n = 97$  treatment-seeking patients diagnosed with CBB, and to identify the most relevant predictors of therapy outcome.

**Method:** The intervention consisted of 12 individual CBT weekly sessions, lasting approximately 45 minutes each. Data on patients' personality traits, psychopathology, sociodemographic factors, and compulsive buying behavior were used in our analysis.

**Results:** The risk (cumulative incidence) of poor adherence to the CBT program was 27.8%. The presence of relapses during the CBT program was 47.4% and the dropout rate was 46.4%. Significant predictors of poor therapy adherence were being male, high levels of depression and obsessive-compulsive symptoms, low anxiety levels, high persistence, high harm avoidance and low self-transcendence.

**Conclusion:** Cognitive behavioral models show promise in treating CBB, however future interventions for CBB should be designed via a multidimensional approach in which patients' sex, comorbid symptom levels and the personality-trait profiles play a central role.

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## 1. Introduction

### 1.1. Compulsive buying behavior: definition, prevalence and comorbidity

Compulsive buying behavior (CBB) is characterized by impulsive drives and compulsive behaviors resulting in excessive

shopping that causes significant impairment, interference with social and/or occupational functioning and often results in legal or financial problems [1]. CBB prevalence has risen significantly during the past two decades and is increasingly receiving more attention from researchers. Prevalence estimations in representative surveys has revealed CBB rates to lie between 6% and 7%, and stratified point indexes indicates that younger people and women are more prone to develop the disorder [2,3]. A recent meta-analysis of 40 studies estimated the pooled prevalence for CBB in adult representative samples into the 95% confidence interval 3.4% to 6.9%, with a higher frequency in university students, those of non-community origin, and shopping-specific participants [4].

CBB was not included in the latest version of the DSM-5 [5], nor in the ICD-10 [6], hence there is a lack of consensus regarding

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diagnostic criteria [7]. Operational definitions have generally relied on similarities with impulse control disorders [8] and encompass cognitive and behavioral aspects [9–11]. It has strongly been associated with other psychiatric conditions, particularly high lifetime comorbidity rates with the Axis I mood and anxiety disorders, eating disorders, obsessive-compulsive disorders, substance use disorders, other behavioral addictions and impulse control disorders [8,12–14].

At present, etiological studies conceptualize CBB as a multidimensional condition with contributing neurobiological, psychological and social factors. Neurological studies outline disturbed neurotransmission in CBB samples (mainly in the serotonergic, dopaminergic and opioid systems) and altered activations in frontoparietal regions, reward processing and limbic systems [15,16]. Psychological related to developing behavioral addictions factors include personality traits characterized by high scores in impulsivity [17], sensation-seeking and compulsivity [18], and extroversion [19], high levels of positive-negative urgency [20], high emotional dysfunction levels [21] and high exposure to adverse life events [22]. Several sociocultural contributors may include living in a market-based economy, one's personal financial state, attitudes toward money, the variety of goods available, and having significant leisure time [23]. For example, research has found that CBB tends to run through a chronic developmental course in families featuring mood and substance use disorders [24]. Some authors have even ventured to define CBB as an extreme form of habitual non-pathological shopping in societies with materialistic values [25].

### 1.2. CBB treatment approaches

Few studies to date have examined the effectiveness of evidence-based treatment approaches for CBB. Interventions for this disorder include cognitive behavioral therapy (CBT), supplemented by participation in self-help groups [26], novel mixed approaches [27,28] and pharmaceutical treatments in certain cases [29–31].

Cognitive behavioral models show promise in explaining and managing CBB. The model presented by Kellett and Bolton [32] differentiates and unifies key cognitive, affective and behavioral factors developed in four differentiate phases/stages: antecedents, internal-external triggers, the act of buying, and post-purchase states. This model depicts CBB in the form of a vicious circle, whereby the final negative post-purchase stage generates the emotional triggers for the repetition of the whole cycle, which allows for CBB to become self-reinforcing/regulating over time. CBT programs adapted for CBB samples encompass diverse elements highlighting sensitization, stimulus control, psychoeducation, financial counseling, cognitive restructuring, and relapse prevention [33]. These interventions have been applied in both a group and individual format [2,26].

Studies examining the effectiveness of such interventions have thus far provided promising results. When comparing group CBT programs to a waiting list control group, CBT was reported to be significantly to reduce number of compulsive buying episodes [34], and this improvement in CBB symptomatology was well-maintained at a 6-month follow-up [35]. Another study concluded that CBT led to improvements in the primary outcome variables but that it did not affect comorbid psychopathology (compulsive hoarding, impulsivity and general symptom levels) [36]. Most recently, a pilot study, which randomly allocated patients to group CBT, telephone-guided self-help and a waiting list, found that face-to-face group CBT was more effective than the other two conditions [37]. Innovative mixed treatment approaches have also shown potential to be effective in reducing overall compulsive buying symptomatology [27,28].

Regarding pharmaceutical interventions, no specific medication is currently approved for the treatment of CBB, but psychopharmacologic treatment studies have actively been pursued in the last decade [29–31,38]. As a whole, open label trials with drug interventions suggest that antidepressants could improve compulsive buying related behaviors, though results have so far been mixed [31]. A most recent systematic review conducted by Grant et al. [39] concluded that the common neurobiological dysfunction observed in substance use disorders and other behavioral addictions provide backing for the usefulness of utilizing medication to treat CBB. As psychopharmacological treatment for CBB is still in its nascent stages, larger, more diverse randomized controlled trials are needed to conclusively demonstrate the effectiveness of such interventions over placebo [29–31,38–40].

### 1.3. Justification and objectives

Current systematic reviews based on case studies and clinical trials conclude that CBT programs hold promise in the treatment of CBB, yet these meta-analyses also highlight that further evidence is required in order to gain better understanding of this psychiatric condition and to further prevention and treatment strategies [2,26].

The purpose of this study was to estimate the short-term effectiveness of an individual standardized CBT program carried out over 12 weekly sessions and to identify the most relevant predictors of the primary therapy outcomes.

## 2. Material and methods

### 2.1. Participants

Participants considered for the study were all the patients that arrived to the Pathological Gambling Unit in the Psychiatry Department at Bellvitge University Hospital for CBB treatment. These participants were assigned to a manualized individual CBT program ( $n = 97$ ). Exclusion criteria were having an organic mental disorder, an intellectual disability or an active psychotic disorder.

### 2.2. Instruments

#### 2.2.1. Compulsive buying disorder

The patients were assessed using a structured face-to face interview modeled after the SCID-I [41], covering the presence of impulsive control disorders, such as CBB. Diagnostic criteria for CBB were determined according to the guidelines set by McElroy et al. [1]. These criteria have become standard in the CBB research community and in clinical practice [40], and numerous reliable and validated instruments have been developed based on them [42–45]. However, it should be noted that no formal diagnostic criteria for CBB have been accepted for the DSM or the ICD-10. At present, it is recommended that CBB diagnosis be accessed via detailed face-to-face interviews which explore attitudes towards buying, underlying cognitions, associated feelings, and the extent of worrying caused by shopping behavior [2].

#### 2.2.2. Symptom Checklist-Revised (SCL-90-R) [46]

This is a 90-item questionnaire measuring psychological distress and psychopathology. The items assess nine symptom dimensions: somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation and psychoticism. The global score (Global Severity Index [GSI]) is a widely used index of psychopathological distress. The Spanish adapted version was used in this study [47]. Cronbach's

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