Compulsive Buying Disorder

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Abstract

The increasing availability of credit has made buying a frequent behavior in everyone's life. Compulsive buying disorder (CBD) is characterized by loss of control over buying, accruing debts, and psychosocial distress. Reported by the founding fathers of modern psychiatry, Kraepelin and Bleuler described it as a monomania and named it oniomania. CBD may have a profound impact upon both individuals and society; however, it remains absent from current diagnostic classifications. There are still doubts regarding the psychopathology and nature of CBD; some regard it as a behavioral addiction or a member of two different groups, either the bipolar spectrum or the obsessive-compulsive spectrum of

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disorders. Conservative estimates describe a prevalence around 2 % in the general population with an extra 6 % at risk for CBD. An association with female gender is usually described, but it has been recently challenged. The CBD construct is based upon three concepts: emotional activation, urges, and affect regulation. Current and lifetime psychiatric comorbidities are usual among treatment-seeking compulsive buyer, respectively, 50 % and 90 %; the most common are mood, anxiety, and impulse control disorders. Accounts of subtypes of CBD patients describe a thrill- and pleasure-seeking impulsive type and an emotionally stricken compulsive type. SSRIs in general and citalopram in particular have been used to treat CBD, but so far, its efficacy remains undetermined. The modulation of dopamine pathways within the brain reward system has been speculated as a promising pharmacological approach. So far, the best evidence-based treatment approaches come from cognitive-behavioral models.

96.1 Introduction

Since antiquity, the act of buying has been present in society. The emergence of currency modified cultural and moral values, marking a period in which power went from being determined by the family name to being defined by commerce, gaining momentum with the adoption of monetary systems (Vissering 2008). The act of buying continued to distract and enrapture people throughout the subsequent millenniums, driving commerce and influencing governmental structure. The lack of control over this behavior aroused the concern that we could be facing a clinical disorder.

Compulsive buying disorder (CBD) was described at the beginning of the twentieth century by two descriptive psychiatrists, Kraepelin (1915) and Bleuler (1924). Both founded their descriptions on Esquirol's (1838) concept of monomania. Kraepelin (1915), the first to elaborate the syndrome, titled it oniomania – from the Greek *onios* (for sale) and *mania* (insanity), describing it as a pathological impulse. He underscored the predominance of the female sex and believed that oniomania would be a subclinical variation of kleptomania. Bleuler (1924) emphasized the impulsive nature of the disorder and likened it to the insanities of impulse along with pyromania (apparently much more abundant at that period that it appears to be today) and kleptomania (Tavares et al. 2008).

CBD did not arouse the interest of researchers in the following decades, except among the study of consumer behavior (O'Guinn and Faber 1989; Elliott 1994) and psychoanalysts that elaborated case reports (Krueger 1988). During the early 1990s, three independent clinical case series studies involving 90 individuals were published, after which CBD once again returned to be globally discussed (Christenson et al. 1994; Schlosser et al. 1994), with reports originating from countries such as Germany (Scherhorn et al. 1990), Brazil (Bernik et al. 1996), Canada (Valence et al. 1988), France (Lejoyeux et al. 1997),

England (Elliott 1994), and the USA. This renewed interest was probably fostered by the perception of the profound impact that CBD may have upon individuals as well as on society. Indeed, it is estimated that in the USA compulsive consuming generates more than US$4 billion in annual purchasing (Kacen and Lee 2002; Tavares et al. 2008).

Despite being described by researchers and scholars for more than a century, CBD continues to be, inexplicably, undefined and understudied. It is absent from modern classifications in psychiatry, except possibly for the classification in the residual category of Impulse Control Disorders Not Otherwise Specified in the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR) (APA 2000) or the International Classification of Diseases of the World Health Organization, 10th Edition (ICD-10) (Filomensky et al. 2012). A possible explanation for this state of affairs is the existence of diagnostic doubts regarding the psychopathological nature of CBD. Some researchers consider CBD to be an addictive disorder, incorporating it into the classification of drug and alcohol abuse disorders, or behavioral addictions, which include pathological gambling, kleptomania, Internet addiction, and compulsive sexual behavior (Glatt and Cook 1987). Others consider CBD to be an excessive behavior secondary to mood disorders, associated within the frameworks of mania, hypomania, or mixed episodes in bipolar disorder (Lejoyeux et al. 1996), or as a subsidiary symptom of hoarding, on the obsessive-compulsive disorder spectrum (Hollander et al. 1996; Filomensky et al. 2012).

There is also a stream of researchers who criticize the attempts to classify compulsive consumption as a disorder, stating that it implies medicalization of variations within the spectrum of consuming behaviors (Lee and Mysyk 2004). Unfortunately, this view ignores the reality that CBD is a prevalent and severe syndrome and stigmatizes the attempts to recognize, understand, and treat the condition.

96.2 A Biopsychosocial View of Compulsive Buying

96.2.1 Epidemiology

Studies estimating the prevalence of CBD in the general and specific populations report rates of approximately 2–8 %. In spite of the increasing scientific and layman interest in the disorder, there is no evidence to suggest that the prevalence of CBD is increasing. A study by Faber and O'Guinn (1992) selected 292 Americans from the general population in Illinois to respond to the Compulsive Buying Scale (CBS) estimated that almost 6 % of the population would be at risk for CBD. Grant et al. (2005) evaluated 204 psychiatric inpatients and reported a prevalence rate of CBD over the lifetime of 9 %. More recently, a study by Koran et al. (2006) interviewed approximately 2,500 American adults through an anonymous telephone questionnaire. They determined a CBD prevalence rate of about 5 %, and a ratio of men to women of 1:1, which indicates a rather larger participation of men than previously reported. The anonymous nature of this telephone survey may have

helped male compulsive shoppers to be open about their difficulties. Indeed, other reports that pointed to male-to-female ratio around 1:4–1:5 were almost all conducted in clinical settings (Filomensky et al. 2012). Kraepelin and Bleuler had already proposed the predominance of the female gender in CBD, suggesting that the female compulsive buyer was in search of risk and excitement, much like the risk-seeking behavior in pathological gambling predominantly seen among men. For Dittmar and Drury (2000), the prevalence of the female gender in CBD appears as a compensation strategy to combat negative emotions and low self-esteem. They state that the gender difference is genuine and should not be attributed to the underrepresentation of males in clinical samples, basing their conclusion in a study conducted in the general population of the UK, in which 92 % of the respondents classified as compulsive buyers were women. Interestingly, in 2005 Dittmar carried out another survey about consuming behaviors in adolescents. Two-hundred and five teenagers between the ages of 16 and 18 were selected from two schools in England. The results indicated a CBD prevalence ratio similar to the adult survey, but without gender imbalance, suggesting that regarding uncontrolled shopping men are likely to catch up with women in the near future (Dittmar 2005). Nonetheless, gender differences regarding favored purchasing will likely remain, with female compulsive shoppers targeting mainly clothes, handbags, shoes, perfumes, makeup, and jewelry, while men prefer electronics and objects that display elevated social status such as expensive suits, watches, electronic gadgets, and cars (Christenson et al. 1994; McElroy et al. 1994; Black 1996, 2001).

It is believed that CBD begins toward the end of adolescence, around 18 years of age, or at the beginning of adulthood. This is the period in which the adolescent develops more autonomy and emancipation from the nuclear family, when they are likely to acquire credit for the first time (Black 2001). Nevertheless, the perception of buying behavior as a problem occurs later, around 30 years of age, and treatment seeking between 31 and 39 years of age.

Before 18 years of age, uncontrolled buying is generally associated with a more diffuse general pattern of behavioral disinhibition, which can include smoking, alcohol and drug misuse, and premature sex (Roberts and Tanner 2002). Besides, 24-h shopping made possible by online credit card purchasing could be a contributing factor to adolescent onset. Indeed, it has been reported that among computer compulsive users, up to 19 % would fulfill the criteria for CBD (Black 2001). In view of this fact, it is likely that some compulsive shoppers will enter their adult lives already with a substantial debt.

CBD is commonly associated with severe personal impairment, both financial and familial (Black 2001), as well as other psychiatric disorders, including personality disorders (Black 2007; Tavares et al. 2008). Although there are a lack of longitudinal studies for CBD, some studies indicate that the course of the disorder can be chronic or recurrent (Christenson et al. 1994; Schlosser et al. 1994). However, the treatment of CBD can modify the course of the disorder, as shown in a study in which patients who responded to treatment with citalopram maintained states of remission during 1 year (Koran et al. 2003; Aboujaoude et al. 2003).

96.2.2 Diagnosis and Assessment Scales

In 1989, O'Guinn and Faber defined compulsive buying as an addictive behavior characterized by "a response to an uncontrollable drive or desire to obtain, use or experience a feeling, substance, or activity that leads an individual to repetitively engage in a behavior that will ultimately cause harm to the individual and/or others (p. 148)," underscoring the chronic and repetitive nature of CBD. Valence and colleagues (1988) proposed that CBD was a three-pillar construct defined as follows: (1) a strong emotional activation when exposed to a shopping environment and shopping opportunities, (2) tension and buying urges elicited by the exposure to such stimuli, and (3) shopping and buying as means to obtain affect regulation, shortly lived because it is usually followed by post-purchase guilt. Moreover, it is likely that later negative consequences (indebtedness, family and friends reproaches, etc.) enhance the negative affective state, which in turn will lead to stress relief-seeking behavior through further shopping and buying, thus closing a cycle of self-reinforced behaviors. Both group of researchers developed their own scales based on these roughly equivalent approaches to CBD. One study pointed to the complementary nature of these scales, reflecting the interrelated aspects of both models. Although subtle, the difference between shopping (perusing showcases and malls and analyzing objects in display) and actual buying (the exchange of money for the acquisition of a desired object) seems relevant. Indeed, it appears that Valence's approach has a better focus over shopping behavior and its effect over affect regulation, while Faber and O'Guinn's perspective seems to better capture the extremes of uncontrolled buying, associated behaviors, and consequences. Thus, their scale may be better suited for the assessment of clinical samples. In both cases, the models suggest that CBD cannot be characterized solely by impulsive purchasing, which for that purpose has to be combined with attempts at emotional self-regulation by shopping and buying.

In 1994, McElroy and colleagues proposed the following diagnostic criteria for CBD, emphasizing the inability to resist the impulse to buy:

(A) Maladaptive preoccupation with buying or shopping, or maladaptive buying or shopping impulses or behavior, as indicated by at least one of the following:
   1. Frequent preoccupation with buying or impulses to buy that is/are experienced as irresistible, intrusive, and/or senseless.
   2. Frequent buying of more than can be afforded, frequent buying items that are not needed or shopping for longer periods of time than intended.

(B) The buying preoccupations, impulses, or behaviors cause marked distress, are time-consuming, significantly interfere with social or occupational functioning, or result in financial problems (e.g., indebtedness or bankruptcy).

(C) The excessive buying or shopping behavior does not occur exclusively during periods of hypomania or mania.

These criteria are currently the most employed, despite the scarcity of studies endorsing their validity and reliability. The lack of official and specific diagnostic criteria for CBD is an additional factor contributing to the disorder's permanence in a residual diagnostic category in the section for Impulse Control Disorders Not Otherwise Specified (APA 2000).

It is important to differentiate normal from uncontrolled buying. Essentially, the distinction is not based on the quantity of money spent in relation to the income level, but on a subjective feeling of irrepressible urges to buy, the experience of being out of control while buying (e.g., feeling as if one's behavior was led by an external force), the extent of worry, the degree of distress suffered by the individual, and the appearance of adverse and negative consequences. At any moment of their lives, people may experience an occasional shopping binge, particularly in special occasions such as birthdays or holidays. However, isolated episodes of unrestrained buying should not be confused with CBD's impulsive, harmful, and recurrent purchasing.

Several researchers have developed instruments for the investigation and diagnosis of CBD or for severity assessment. The Minnesota Impulsive Disorders Interview (MIDI), developed by Christenson et al. (1994), is a semi-structured interview that evaluates the presence of CBD, kleptomania, trichotillomania, intermittent explosive disorder, compulsive sexual behavior, pathological gambling, and compulsive exercise. Grant et al. (2005) report that based on McElroy's criteria for CBD, the MIDI presented a sensibility of 100 % and specificity of 96 %.

Faber and O'Guinn's (1992) previously mentioned scale, the CBS, is a seven-item self-report one-dimension scale with high internal consistency (Cronbach's alpha = 0.95) that seems to reliably distinguish normal from compulsive buyers, with estimated sensitivity of almost 90 % and specificity of 85 %.

Monahan and colleagues (1996) adapted the Yale-Brown Obsessive-Compulsive Scale (YBOCS – 1989) to measure the severity of CBD. The YBOCS – Shopping Version (YBOCS-SV) evaluates cognitions and behaviors associated with CBD. It has been mostly used to assess the effects of treatment in clinical trials. The mean pretreatment score for CBD patients was 21 (range 18–25), which was grossly larger than the mean score of 4 (range 1–7) for healthy controls. Unlike the other scales that base their approach on the impulse control disorder framework, due to its original source, the YBOCS-SV is able to tap into the compulsive aspects of CBD.

In that sense, the Richmond Compulsive Buying Scale is unique in its attempt to combine both impulsive and compulsive aspects of CBD. The authors also tried to address another conceptual limitation due to a tautological flaw in the definition of psychiatric disorders by which a behavioral syndrome constitutes a disorder because it implies negative consequences and the reason why it causes negative consequences is because it is a disorder. Thus, Richmond's CBS focuses on behavioral aspects of buying rather than shopping and purposefully avoids tapping into negative consequences. It has convergent validity with Faber and O'Guinn's CBS and its six-item simple structure makes it feasible for population surveys (Ridgway et al. 2008).

Other scales have been developed by various groups, but have not seen ample use; for a thorough overview of the available CBD-related scales and their psychometric properties, usage, and references, the reader may access the address http://www.knowmo.ca/capacity/addictionmeasures/addictionmeasureslist.aspx?BlogTagID=e9193db3-b04d-4b3b-aecb-fdd7c507add8 at the Know Mo website, which stands for Alberta's hub for mobilizing knowledge about addictions and mental health.

96.2.3 Psychiatric Comorbidity and Relationship with Other Mental Disorders

The association of CBD with other psychiatric disorders is the rule rather than the exception, with comorbidity most often seen with mood, anxiety, substance use, eating, and other impulse control disorders (Christenson et al. 1994; McElroy et al. 1994; Schlosser et al. 1994; Black et al. 1998, 2000; Ninan et al. 2000; Black 2001; Mitchell et al. 2006; Mueller et al. 2009).

A bicentric study analyzed data from US and Germany treatment centers and found that approximately half of the sample had at least one current psychiatric comorbidity, mainly an anxiety disorder, and that 90 % fulfilled criteria for at least one Axis I diagnosis during the lifetime. The main diagnoses were mood disorder (74 %), anxiety disorder (57 %), and impulse control disorder (21 %) of which intermittent explosive disorder was most common (Mueller et al. 2010).

It is not uncommon for CBD patients to build up collections of similar items varying one single aspect, e.g., color, size, or design, to zealously stock and hoard them, not allowing other people to interfere with them. For this reason, a relationship with obsessive-compulsive disorder (OCD) has been speculated. However, only one study has found a relevant association, reporting that seven (35 %) out of 20 patients consecutively admitted for CBD treatment had a lifetime diagnosis of OCD (McElroy et al. 1994). Conversely, CBD has been described as a frequent comorbidity among OCD and eating disorder patients (Fernández-Aranda et al. 2008, 2006), with a suggestion that in OCD such an association represents a more impulsive subtype (approximately 10 % of the OCD patients – Hantouche et al. 1997; du Toit et al. 2001). The hoarding behavior seems to be the psychopathological link between the two disorders and for both of them a marker of a compulsive trait and severity (Frosts et al. 2009). For CBD, severity goes hand in hand with psychiatric comorbidity; thus, the presence of hoarding behavior is associated with mood, anxiety, and eating disorders (Kyrois et al. 2004).

On the other hand, the frequent comorbidity with depression and unrestrained expenditure have been pointed as evidences of a link between CBD and bipolar disorder and the former as a member of the so-called bipolar spectrum of disorders (Akiskal et al. 2000). In trying to clarify if CBD should be regarded as a sub-syndromal bipolar disorder, an OCD-related disorder, or a condition apart from the spectrums of both disorders, Filomensky and colleagues (2012) investigated 80 individuals undergoing outpatient treatment for either bipolar disorder, OCD, or CBD regarding impulsivity, obsessive-compulsive traits, hoarding, and mood spectrum of symptoms. Compared to the other two conditions, CBD patients scored significantly higher on all impulsivity measures and especially on the non-planning subdimension. In the hoarding spectrum, they scored higher for the acquisition subdimension, but not for difficulty discarding or cluttering subdimensions. Manic symptoms were distinctive of BD patients, while elevated scores on the contamination/washing and checking dimensions differentiated OCD patients. A discriminant model built with these variables correctly classified

79 % of the CBD outpatients, 71 % of the bipolar patients, and 77 % of the OCD. The authors concluded that given the high impulsivity involved and the intense acquisition desire, CBD, like pathological gambling, was closer to an impulse control disorder resembling a behavioral addiction. These findings establish an interesting parallel with a previous study that described two independent factors for the occurrence of a compulsive episode: an urgency/desire to buy and loss of control over buying (Nataraajan and Goff 1991).

Regarding the acquisition desire, other authors have described that in resisting a purchase CBD patients feel like they are wasting a "must have" opportunity, correlating this feeling to excessive materialism (Kyrios et al. 2004; Mueller et al. 2011) and underscoring the semblance with impulse control disorders. The relationship of CBD with other impulse control disorders needs to be further investigated. There are evidences of comorbidity with psychogenic excoriation, compulsive eating, and other compulsive/addictive behaviors (Christenson et al. 1994; Schlosser et al. 1994; Lejoyeux et al. 1997; Mueller et al. 2009, 2011).

With regard to personality disorders, very few studies have investigated Axis II disorders in the population of compulsive buyers. The two most important studies revealed that the disorders most observed were from clusters B and C: borderline, obsessive-compulsive, and avoidant personality disorders. The first study demonstrated that around 60 % ($N = 46$) of the compulsive buyer patients presented with at least one of the personality disorders mentioned above (Schlosser et al. 1994), and the second around 73 % ($N = 30$) (Mueller et al. 2009).

96.2.4 Clinical Manifestations and Subtypes of Compulsive Buyers

Black (2007) described four phases to characterize an episode of compulsive buying: the first is the anticipation, in which the compulsive buyer experiences thoughts, anxiety, or worry regarding the acquisition of a particular object or simply the act of buying itself. The second phase is the preparation, in which the person prepares him- or herself to go shopping, including researching the desired object, deciding on the clothes that will be worn while shopping, deciding when to go, where to go, and how to pay. This phase can be rather shortened depending on the degree of emotional instability. Negative emotions such as anger, anxiety, boredom, and self-criticism have been related to compulsive episodes of buying (Miltenberger et al. 2003). When pressured by an intense negative affective state, the CBD patient feels the need to quickly perform a purchase, regardless of the nature of the purchased object, or they may feel a need to purchase an object to which they are particularly fixated, e.g., a nail polish flask, a CD of their favorite artist, etc. The purchase, per se, is the third phase, in which compulsive buyers report the emotional experience of the act of buying and the ecstasy. Finally, the fourth phase is the consummation of buying, accompanied by immediate relief of the negative affective, but often shortly followed by self-deception and unpleasant feelings such as guilt or regret. Several authors underscore this narrow association between buying and the need to regulate negative affective sates.

Compulsive buyers divert their attention away from these internal negative emotions and onto external stimuli, which generates an increase in risky compulsive behaviors (Faber and Vohs 2004; Baumeister 1991; Claes et al. 2010; Mueller et al. 2011).

In the cognitive sphere, compulsive buying episodes have been associated with means of identity building, "all or nothing" attitudes toward money, hindsight appraisal of purchasing, and gift buying as a way to garner affection and avoid embarrassment (Mitchell et al. 2006; Filomensky and Tavares 2009). Dittmar and Drury (2000) propose that self-image image building is more related to women than men.

It is common for these episodes to occur in a solitary manner, routinely or in the form of purchasing binges. Sometimes to lessen the guilt, compulsive buyers will also buy for their partners, family members, or friends. When buying for themselves, they often – though not necessarily – hide the objects in closets, drawers, or the car trunk. Many of such purchases may never be used. There is no pattern to stores or commercial places in which these episodes of excessive spending occur; however, buyers do have their "favorite" shopping places, catalogues, and online sites. A study that evaluated excessive Internet use among compulsive and non-compulsive buyers concluded that buying through the Internet is more common among compulsive buyers. The same applies for purchases made through the television (Mueller et al. 2011).

DeSarbo and Edwards (1996) described two subtypes of compulsive buyers: one group in which the principal trigger of a compulsive episode was the materialism and desire for objects with a tendency to be more impulsive and the second group in which the compulsive episode was more motivated by internal emotions such as low self-esteem and little control over the desire to buy. This second group presented with a higher propensity to develop depression. Likewise, another study pointed to two distinct groups among compulsive buyers: one in which the motivation for the purchase was guided by positive reinforcement related to pleasant aspects of the purchase and the other in which the purchase occurred as a result of emotional suffering associated with financial problems, interpersonal relationships, and emotional questions, revealing a group with significantly higher levels of debt (Thornhill et al. 2012).

Therefore, like previously described for pathological gambling, CBD seems to encompass a double nature, an impulsive side related to purchase cravings and lack of planning and a compulsive side characterized by the avoidance of negative emotions and attempts to control one's affective state, both combined lead to loss of control over buying. The determination of the subtype depends upon which side prevails (Tavares and Gentil 2007).

96.2.5 Social-Cultural Issues

Social-cultural factors alone cannot be blamed for CBD occurrence; however, it is important to consider their influence. The easy access to growing amounts of credit

is a worldwide phenomenon, and in the last decades there have been a shift in advertising strategies from focusing on the qualities of the purchase to how good purchasing makes you feel. This is especially true for countries in which the economy is consumer based (Black 2007).

An almost universal selling strategy is to anticipate the pleasure of the acquisition through credit card shopping or other option and to delay the "pain" of payment, to which impulsive individuals may be particularly vulnerable. Indeed, several measures of compulsive shopping have a strong correlation with credit card use and credit card minimum payment (Faber and O'Guinn 1992; Ridgway et al. 2008). The credit card has become a cultural icon, going beyond a mere form of modern "plastic cash," something particularly noticeable in developing economies and most appealing to vulnerable women as a promise of more autonomy in societies largely dominated by men (Hanley and Wilhelm 1992).

96.2.6 Neurobiology, Genetics, and Risk Factors

Family studies of compulsive buyers show a heavy concentration of mood, anxiety and eating disorders, substance use, and other impulse disorders, including CBD itself. Evidence also exists showing that traumatic childhood events such as sexual abuse are factors that predispose the development of CBD (Black 2007; Black et al. 1998; McElroy et al. 1994). A study of 370 gynecology patients investigated the relationship between five traumatic experiences in childhood (before the age of 12) and CBD. The results indicated that childhood trauma is associated with compulsive buying behavior, particularly when the trauma was emotional in nature or involved witnessing violence (Sansone et al. 2013). However, there are no data on how childhood trauma and early adversities can build a specific vulnerability to consuming behavior or if it would be an unspecific vulnerability factor for various psychiatric syndromes.

There are few neurobiological studies of CBD, and most are concentrated on the loss of regulation over the serotonergic, dopaminergic, and opioid neurotransmission. Due to the diagnostic doubt that haunts CBD, researchers who note similarities between CBD and OCD use selective serotonin reuptake inhibitors (SSRIs), as it is a common and effective treatment for OCD, but so far its efficacy in CBD and the role of serotonin transmission in CBD remain undetermined (Black et al. 1997; Koran et al. 2003).

Potenza (2001) proposes that compulsive purchases, pathological gambling, and other self-indulgent behaviors are related to factors involving low dopaminergic activity, the so-called brain reward deficiency syndrome (BRDS). Thus, the preferred biological tools to intervene in CBD would be those directly or indirectly modulating dopamine transmission, through opioid and glutamate modulation, in the brain reward system. Few reports have suggested the benefits of treating CBD with the opioid antagonist naltrexone, raising speculations about the role of β-endorphin and opioid receptors in CBD (Grant 2003). A preliminary study with memantine, an antagonist of the N-methyl-D-aspartate receptor, resulted in reduced

glutamate excitability, in addition to improving the compulsive buying behavior of patients with CBD (Grant et al. 2012). In any case, proposals regarding neurotransmission remain up to now speculative, with no studies so far having directly examined the neurotransmitters involved in CBD, through either plasma levels or cerebrospinal fluid.

Comings et al. (1997) found a significant correlation between the polymorphism of the D1 receptor gene and Tourette's syndrome, pathological gambling, alcohol abuse, and CBD, corroborating the BRDS hypothesis. Another study investigating the polymorphism of the promoter region of the serotonin transporter gene did not find any association with CBD. However, it is important to note that this study involved a small sample and studied only the association with alleles of small effect (Devor et al. 1999). A recent study carried out by De Neve and Fowler (2010) identified an association between the polymorphism of the MAO-A gene and a higher probability of credit card debt. The MAO-A is implicated in the metabolism of serotonin and has one or both of the variant alleles of low efficacy associated with higher probability of addiction and impulsivity.

So far, no neuroimaging studies with CBD diagnosed individuals have been conducted. Nevertheless, one study using functional magnetic resonance imaging in a nonclinical sample observed activation of the nucleus accumbens when the subjects anticipated an advantageous purchase. This is the same structure over stimulated by drug addictions, which confirms the involvement of brain reward system in buying behavior. Conversely, disadvantageous offers, i.e., excessive prices, activated the insula and deactivated the mesial prefrontal cortex, indicating the involvement of different circuitries in the decision-making process related to purchasing. Interestingly, other studies have associated the insula activity with the experience of physical pain and its emotional component (Knutson et al. 2007).

96.2.7 Treatment

96.2.7.1 Psychotherapy

Over the past 5 years, studies regarding the treatment of CBD established important advances, as what existed were previous case reports aligned to the theoretical orientation of the authors. Still, controlled studies evaluating treatment efficacy for CBD, independent of therapeutic modality, remain scarce (Kellett and Bolton 2009; Benson and Gengler 2004; Mitchell et al. 2006; Steketee and Frost 2003).

Cognitive-behavioral models remain as the most tested and studied treatment programs. The first studies were by Lejoyeux et al. (1996) and Bernik et al. (1996), both of which suggested that cue exposure and response prevention may be useful in the treatment. Bernik and colleagues (1996) reported on two cases treated with clomipramine for panic attacks, who also presented with CBD. The medication did not improve compulsive buying behavior; however, both responded well to 3–4 weeks of buying cue exposure and response prevention, although no posttreatment information was provided.

One of the first to use the cognitive behavioral therapy group were Burgard and Mitchell (2000). A pilot study carried out by Mitchell et al. (2006) involved 28 patients with CBD diagnoses for the treatment with a cognitive-behavioral model and 11 controls on the waiting list. At the end of 12 weeks, the results showed significant advantages of cognitive-behavioral therapy, with subjects outperforming the waiting list controls in terms of the number of compulsive buying episodes and time spent buying. This improvement was maintained over the following 6 months. In 2008, Mueller et al., inspired by the Mitchell et al. (2006) study, treated 31 compulsive buyers with a 12-week cognitive-behavioral intervention and compared them with 29 control patients on the waiting list. The treatment sessions specifically dealt with problems related to compulsive buying, restructuring of negative thoughts and emotions regarding buying, control over buying behavior, and problem-solving skills. Throughout the next 6 months, the patients continued to present with improvements when compared with the control group.

Imaginary desensitization was also used to treat a female compulsive buyer with a treatment package that also included motivational interviewing, financial planning, leisure, and cognitive restructuring. The final evaluation was positive, showing a reduction in compulsive episodes (Donahue et al. 2011). Another uncontrolled study reported on a cognitive-behavioral group intervention with an emphasis on cognitive restructuring. Specific sessions were devised to deal with the most common cognitive distortions related to buying such as buying as a way of coping with emotions and building an identity and "all or nothing" type of thinking. The nine patients who participated all reported improvement of both cognitions and behaviors related to CBD (Filomensky and Tavares 2009).

96.2.7.2 Psychopharmacology

Similar to psychotherapeutic treatments, controlled clinical trials for CBD are scarce. Lejoyeux et al. (1995) suggest that depressive compulsive buyers have an increased chance of improving their compulsiveness when treated with antidepressants than compulsive buyers without depression. A clinical trial with ten patients evaluated the use of fluoxetine in compulsive buyers over 9 weeks. Nine of the ten patients showed improvement, suggesting that it is not necessary for patients to be depressed in order to benefit from antidepressants (Black et al. 1997).

Two randomized controlled clinical trials with fluoxetine were carried out soon after. The first treated 37 compulsive buyers over the course of 12 weeks and did not find a difference between fluoxetine and placebo (Ninan et al. 2000). The second studied a sample of 23 CBD inpatients without depression (Black et al. 2000). The participants were randomly distributed to fluoxetine ($n = 12$) or placebo ($n = 11$). At the end of 9 weeks and applying the Scale of Global Clinical Improvement, 50 % of the patients in the fluoxetine group and 64 % of those in the placebo group were classified as showing "great" or "very great" improvement. The positive response of the placebo group points to the need to undertake more randomly controlled trials with longer follow-up periods (Christenson et al. 1994; Black 2001).

A clinical trial with citalopram showed favorable results in the double-blind discontinuation study carried out by Koran et al. (2003). Twenty-four patients with

CBD were selected, and after 6 weeks of treatment, 17 patients presented with a significant reduction in spending and purchases and an improvement in global functioning. Then, these patients were randomly assigned to either citalopram or placebo maintenance for 9 more weeks. The seven patients that took citalopram did not relapse, while five of the eight patients who took the placebo relapsed. After 1 year, 73 % of the seven patients who took medication remained in remission from compulsive symptoms even after having interrupted medication. The authors suggested that citalopram treatment might have modified the natural course of the disorder. On the other hand, another study with a similar design using escitalopram found no significant effect (Koran et al. 2007).

Grant (2003) reported on the successful treatment of three patients with naltrexone, and recently memantine was tested in nine CBD patients with encouraging results (Grant et al. 2012).

96.2.8 Self-Help/Community Resources

Other treatments have been elaborated as complementary to those more traditional ones that could be useful. These include self-help books about CBD for individual clarification or group discussion. The Debtors Anonymous group, which was created with the same perspective of Alcoholics Anonymous, is a self-help group coordinated by laymen who have the same difficulties and who provide support and encouragement for those with substantial debt. Simplicity Circles, which exist in some American cities, is a group of volunteers who encourage people to adopt a simple lifestyle, to resist consumerism appeal, and to abandon CBD. Finally, couple and financial counseling may be beneficial as relationships and financial status of the family become stranded because of chronic CBD (Black 2007).

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