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Impulsivity in consumers with high compulsive buying propensity

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ABSTRACT

Compulsive buying (CB) is a pathological behavior leading to impairment and distress. Evidence suggests that CB is associated with impulsivity and hoarding. However, multi-method investigations of impulsivity in CB with and without hoarding are sparse. In this study, consumers with high CB propensity (CBs; $n=28$) and controls ($n=21$) were compared with respect to self-reported and behavioral impulsivity. We investigated the association between impulsivity and hoarding in CBs and compared CBs with hoarding (HCBs) and CBs without hoarding symptomatology (NCBs) with respect to self-reported impulsivity.

Compared to controls, CBs scored higher on self-reported impulsivity, except for "sensation seeking", but performed equally on behavioral assessments. Hoarding was more prevalent in CBs. Self-reported but not behavioral impulsivity was significantly correlated to hoarding symptoms. Compared to NCBs, HCBs reported to be more impulsive. However, the impulsivity facet "urgency" was the only significant predictor of CB although other impulsivity facets and acquisition-unrelated hoarding symptoms were considered.

CBs and especially HCBs perceive themselves as more impulsive. However, this is not reflected on a behavioral level of impulsivity. Future studies should investigate impulsivity in CB under the consideration of hoarding using larger samples and more ecologically valid behavioral assessments.

1. Introduction

Compulsive buying (CB) is a pathological behavior which has already been described by Kraepelin (1909) and Bleuler (1923) at the beginning of the last century and which has received increasing attention during the last decade. Whereas earlier studies reported that mainly females suffer from CB (e.g. Christenson et al., 1994), more recent studies found comparable prevalence rates among men and women (Koran, Faber, Aboujaoude, Large, & Serpe, 2006; Mueller et al., 2010). The point prevalence of CB was estimated to be 5.8% in the US (Koran et al., 2006) and 6.9% in Germany (Mueller et al., 2010). Mueller et al. (2009a) reported high comorbidity rates of affective disorders (80%), substance use disorders (23%), anxiety disorders (87%) and eating disorder (33%) among individuals with CB. Despite its prevalence, CB has neither been explicitly listed in the ICD-10 nor in the DSM-IV, nor in the recently published DSM-5 (American Psychiatric Association, 2013). Accordingly, the classification of CB is still under debate. Some researchers consider CB as an impulse-control disorder (e.g., Grant, Levine, Kim, & Potenza, 2005) or as an addiction (e.g., Lawrence, Ciorciari, & Kyrios, 2014). Other authors suggest that CB may best be conceptualized within the obsessive–compulsive spectrum disorders (Hollander, Kim, Khanna, & Pallanti, 2007), which share compulsive and impulsive facets.

McElroy and colleagues (McElroy, Keck, Pope, Smith, & Strakowski, 1994) proposed research criteria, in which CB is defined as:

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

B. The buying preoccupations, impulses, or behaviors cause marked distress, are time-consuming, significantly interfere with social or occupational functioning, or result in financial

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problems (e.g., indebtedness or bankruptcy).
C. The excessive buying or shopping behavior does not occur exclusively during periods of hypomania or mania." (p. 247).

These criteria were based on interviews with CB sufferers showing that their symptoms were associated with both compulsive (e.g., uncomfortable tension which can be relieved only by buying; intrusive urges to buy) and impulsive features (e.g., the experience of pleasure or relief while buying; McElroy et al., 1994; McElroy, Keck, & Phillips, 1995). In support of this notion, individuals with CB have been found to score higher on measures of obsessive-compulsive symptoms than controls (e.g., Christenson et al., 1994; Frost, Steketee, & Williams, 2002) and to show high rates of obsessive–compulsive disorder (OCD; e.g., Mitchell et al., 2002; Mueller et al., 2009a). However, high rates of DSM-IV impulse-control disorders have also been found in CB in comparison to control participants (Black, Shaw, McCormick, Bayless, & Allen, 2012; Mueller et al., 2009a). In the study of Mueller et al. (2009a), most participants who were diagnosed with an impulse control disorder met criteria for an intermittent explosive disorder. Furthermore, CB was more prevalent in samples of hair pullers (Schreiber, Lust, Odlaug, Derbyshire, & Grant, 2013) and pathological gamblers (Black et al., 2015) than in controls. These findings suggest that impulse control problems and impulsivity may play an important role in the phenomenology of CB (as reflected by difficulties in considering possible negative long-term consequences of an acquisition or by reduced inhibitory control in buying situations leading to unplanned acquisitions).

1.1. CB and impulsivity

Although a large number of measurements of impulsivity exist, there is no generally agreed upon definition of this construct. There is agreement, however, that impulsivity is a multi-faceted construct with various related dimensions (e.g., Dougherty, Mathias, Marsh, & Jagar, 2005). Moeller, Barratt, Dougherty, Schmitz, and Swann (2001) defined impulsivity "as a predisposition toward rapid, unplanned reactions to internal or external stimuli without regard to the negative consequences of these reactions to the impulsive individual or to others" (p. 1784). Barratt (1985) proposed a model of impulsivity encompassing three higher order impulsivity factors (attentional, motor and non-planning impulsiveness), which can be assessed using the Barratt Impulsiveness Scale (BIS; Patton, Stanford, & Barratt 1995). A more recent conceptualization of impulsivity based on factor analyses including several widely used questionnaires of impulsivity was proposed by Whiteside and Lynam (2001): the UPPS Impulsive Behavior Scale (UPPS) with four dimensions ("urgency", "lack of premeditation", "lack of perseverance", and "sensation seeking").

Just recently, the potential relevance of impulsivity in CB has gained more attention. Significantly elevated BIS and UPPS subscale's impulsivity scores have been found among individuals with CB compared to controls (Black et al., 2012; Lejoyeux, Tassian, Solomon, & Andes, 1997; Williams & Grisham, 2012). Furthermore, CB was correlated with self-reported impulsivity as measured with the BIS (Davenport, Houston, & Griffiths, 2012) or the UPPS (Billieux, Rochat, Rebetez, & van der Linden, 2008, Williams & Grisham, 2012). In the study of Billieux et al. (2008), the UPPS subscale "urgency" (i.e., experiencing urges and strong reactions under negative affect) stood out in particular, since it was the only impulsivity facet significantly predicting CB when demographic variables and depression were partialled out. Furthermore, Rose and Segrist (2014) reported that not only negative urgency (i.e., the tendency to act rashly while in a negative affective state) but also positive urgency (i.e., the tendency to act rashly while in a positive affective state) significantly predicted CB. In contrast, the UPPS subscale "sensation seeking" was unrelated to CB (Billieux et al., 2008; Williams & Grisham, 2012), indicating that the openness to new experiences and the preference for exciting activities is of less relevance in CB behavior. Williams and Grisham (2012) argue that sensation seeking may be related to stimulating behaviors (e.g., alcohol consumption), but only on a non-pathological level (compare Zapolski, Cyders, & Smith, 2009).

The majority of studies investigating impulsivity in CB exclusively relied on self-report measures. Arguably, however, impulsivity should not exclusively be measured by self-reports but also by using behavioral measures (e.g., Logan, Schachar, & Tannock, 1997; Billieux, Gay, Rochat, & van der Linden, 2010). Two behavioral paradigms are especially relevant: firstly, the ability to control or suppress automatic responses can be measured with a Stop–Signal–Task (Logan et al., 1997). Interestingly, this measure is associated with the UPPS facet "urgency" (Billieux et al., 2010; Gay, Rochat, Billieux, d'Acremont, & van der Linden, 2008). Secondly, the ability to take consequences of an action into account when making decisions can be measured with the Iowa Gambling Task (IGT; Bechera, Damasio, Damasio, & Anderson, 1994) or the Game of Dice Task (GDT; Brand et al., 2005). The IGT measures decision-making under ambiguity (without explicit information about the outcome of a decision), the GDT measures decision-making under known risk (with explicit information about the probability of an outcome). The association between decision-making and the UPPS subscales is less clear. Depending on the behavioral assessment used, some found an association with "urgency" (e.g., Bayard, Raffard, & Gely-Nargeot, 2011; Billieux et al., 2010), "sensation seeking" (Bayard et al., 2011), "lack of premeditation" (Zermatten, van der Linden, d'Acremont, Jermann, & Bechara, 2005), or with none of the UPPS subscales (e.g., Bayard et al., 2011).

Only few studies investigated impulsivity in CB using behavioral assessments. Compared to controls, individuals with CB performed significantly worse on the IGT (Derbyshire, Chamberlain, Odlaug, Schreiber, & Grant, 2014; Trotzke, Starcke, Pedersen, Mueller, & Brand, 2015; Voth et al., 2014) or on a Stop-Signal-Task (Derbyshire et al., 2014), indicating deficits in decision-making under ambiguity and response inhibition, respectively. However, in the study of Voth et al. (2014) individuals with CB and controls did not differ from non-clinical controls on the IGT, at least when depression was used as covariate. Additionally, although individuals with CB performed worse in the IGT than controls in the study of Trotzke et al. (2015), they did not differ from controls in the GDT. Furthermore, individuals with CB and non-clinical controls did not differ with respect to the Stroop Task, a measure that assesses the ability to suppress an unwanted automatic response. In line with this, Billieux et al. (2010) failed to find a significant correlation between either the IGT performance or behavioral inhibition as measured with a stop-signal-paradigm and CB scores in a non-pathological student sample. Black et al. (2012) compared individuals with CB and controls on various neuropsychological tests (including the IGT) and also found no group differences (except for a test of visual perception).

1.2. CB, hoarding and impulsivity

There is also evidence of an association between CB and hoarding. Hoarding is defined by considerable clutter, the failure to discard objects and the excessive acquisition of goods. The condition leads to significant distress and impairment (Frost & Hartl, 1996). In consequence, hoarding including "excessive acquisition" as a specifier is now included in the recently published DSM-5 in the Obsessive–Compulsive and Related Disorders section. Excessive buying is a frequent form of excessive acquisition (American Psychiatric Association, 2013). Significant correlations between measures of hoarding and CB have been reported for