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Estimated prevalence of compulsive buying in Germany and its association with sociodemographic characteristics and depressive symptoms

Astrid Mueller [a,b,*], James E. Mitchell [b], Ross D. Crosby [b], Olaf Gefeller [c], Ronald J. Faber [d], Alexandra Martin [a], Stefan Bleich [e,f], Heide Glaesmer [g], Cornelia Exner [h], Martina de Zwaan [a]

[a] Department of Psychosomatic Medicine and Psychotherapy, University Hospital of Erlangen, Germany
[b] Neuropsychiatric Research Institute and Department of Clinical Neuroscience, University of North Dakota, School of Medicine and Health Sciences, Fargo, North Dakota, USA
[c] Department of Medical Informatics, Biometry, and Epidemiology, University of Erlangen-Nuremberg, Erlangen, Germany
[d] School of Journalism and Mass Communication, University of Minnesota, USA
[e] Department of Psychiatry and Psychotherapy, University Hospital of Erlangen, Germany
[f] Department of Psychiatry, Social Psychiatry and Psychotherapy, Medical School Hannover, Germany
[g] Department of Medical Psychology and Medical Sociology, University of Leipzig, Germany
[h] Department of Clinical Psychology and Psychotherapy, University of Marburg, Germany

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ABSTRACT

The aim of this study was to estimate the prevalence of compulsive buying and its association with sociodemographic characteristics and depressive symptoms in a nationally representative sample of the German population using the validated German version of the Compulsive Buying Scale (CBS; Faber and O'Guinn, 1992) in order to have a direct comparison with U.S. findings. The point prevalence of compulsive buying in the weighted representative sample ($N = 2,350$) was estimated to be 6.9%. This was somewhat higher than the percentage in the American sample assessed in 2004 (5.8%). No significant difference was found between women and men (6.9% and 6.8%, respectively). Age was inversely related to the prevalence of compulsive buying. Individuals with compulsive buying reported more depressive symptoms assessed via the German version of the Brief Patient Health Questionnaire Mood Scale (PHQ-9). Further research on this topic is needed to establish a clearer delineation of when excessive buying is clinically significant and should be treated and how it could be prevented.

1. Introduction

Compulsive buying disorder is a culture-bound excessive behavior wherein affected individuals engage in excessive buying. Although the phenomenon is receiving increasing attention in research, it has largely been ignored in clinical practice. Historically, Kraepelin (1909) and Bleuler (1923) included excessive buying behavior, termed oniomania, as a clinical entity in their textbooks. According to McElroy et al. (1994), who proposed diagnostic criteria for compulsive buying disorder, the disorder is characterized by frequent buying episodes or impulses to buy that are experienced as irresistible or senseless. The spending behavior and impulses lead to personal distress, social, marital, or occupational dysfunction, and to financial or legal problems. The excessive buying behavior does not occur exclusively during episodes of mania or hypomania.

Compulsive buying disorder is not specifically described in the Diagnostic and Statistical Manual of Mental Disorders, fourth edition (DSM-IV) and International Classification of Diseases (ICD)-10. Regarding the diagnostic criteria of McElroy et al. (1994), it is currently conceptualized as an "impulse control disorder not otherwise specified". Previous research indicated a high comorbidity with depressive, anxiety, compulsive hoarding, obsessive–compulsive, substance use, eating, and personality disorders (Christenson et al., 1994; Schlosser et al., 1994; Black et al., 1998; Mitchell et al., 2002; Mueller et al., 2007a; Mueller et al., 2009). There is no standard drug treatment approach (Kuzma and Black, 2004; Grant et al., 2006; Black, 2007). Cognitive-behavioral psychotherapy was found to be beneficial in two recent controlled trials (Mitchell et al., 2006; Mueller et al., 2008).

Current research suggests that compulsive buying is common in maturing consumer societies. Koran et al. (2006) estimated the lifetime prevalence rate of compulsive buying in the United States to be 5.8%. In Germany, two representative population-based surveys investigating compulsive buying were conducted 10 years apart (1991 and 2001). In the first study, 1% of the East German population and 5.1% of the West German population were identified as compulsive buyers (Scherhorn et al., 1990; Neuner et al., 2005). Ten

* Corresponding author. Department of Psychosomatic Medicine and Psychotherapy, University Hospital of Erlangen, Schwabachanlage 6, D-91054 Erlangen, Germany. Tel.: +49 09131 8544890; fax: +49 09131 8534145.
E-mail address: astrid.mueller@uk-erlangen.de (A. Mueller).

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years later, the percentages had increased with 6.5% of the population in East Germany and 8% of the population in West Germany reporting compulsive buying (Neuner et al., 2005).

The most frequently used scale to screen for compulsive buying is Faber and O'Guinn's (1992) 7-item Compulsive Buying Scale which has been utilized in many studies (Manolis et al., 2008). In the two German surveys, the propensity to engage in compulsive buying was assessed using an adapted version of the Canadian Compulsive Buying Measurement Scale (Valence et al., 1988). This 16-item German Compulsive Buying Measurement Scale is a well-validated compulsive buying screening instrument (Raab et al., 2005). Because different measures of compulsive buying were used, the findings of the American and the German studies are similar only to a limited extent. Thus, the aims of the current study were 1) to evaluate the psychometric properties of the German version of Faber and O'Guinn's Compulsive Buying Scale, and 2) to estimate the prevalence of compulsive buying in a population-based sample using the German version of the CBS in order to have a direct comparison with U.S. findings.

2. Method

2.1. Assessment

The German version of the Compulsive Buying Scale (CBS-G) is the translated version of the original American Compulsive Buying Scale (CBS; Faber and O'Guinn, 1992). The CBS was initially translated for use in Germany by the German authors of this paper, and then back-translated into English professionally by "Translaw", Oxford (UK). The backward translation was then verified for discrepancies against the original English form by the American authors of this paper. The CBS is a well-validated 7-item screening instrument for compulsive buying behavior (see Table 1). CBS-total sores can be calculated from the responses to the seven items through the following regression formula $CBS_{total} = -9.69 + (cbs1a\ 0.33) + (cbs2a\ 0.34) + (cbs2b\ 0.50) + (cbs2c\ 0.47) + (cbs2d\ 0.33) + (cbs2e\ 0.38) + (cbs2f\ 0.31)$. Lower scores on the scale indicate higher levels of compulsive buying. In the original study the authors recommended a cut-off score of 2 S.D. below the general population mean to classify compulsive buyers (cut-off point −1.34).

The Brief Patient Health Questionnaire Mood Scale (PHQ-9) is the nine-item depression module from the Patient Health Questionnaire (PHQ-D; Löwe et al., 2001). Good validity for the PHQ-9 has been reported in German samples (Kroenke et al., 2001; Loewe et al., 2004; Martin et al., 2006).

The German Compulsive Buying Measurement Scale (Raab et al., 2005) is an adapted German version of the Canadian Compulsive Buying Measurement Scale (Valence et al., 1988). This validated German screening instrument consists of 16 items measuring the propensity for compulsive buying. The authors reported an internal consistency with Cronbach's alpha of 0.92. Consumers are classified as being "compulsive" when they reach a score of 45 or more.

The Yale–Brown Obsessive Compulsive Scale-Shopping Version (Y-BOCS-SV; Monahan et al., 1996) is based on the Yale–Brown Obsessive Compulsive Scale (Y-BOCS; Goodman et al., 1989). The Y-BOCS-SV focuses on the severity and frequency of compulsive buying. There exists a validated German version of the Y-BOCS (Hand and Büttner-Westphal, 1991) with a proposed cut-off of 16.

2.2. Data sampling

To estimate the prevalence of compulsive buying in Germany, a population-based sample was drawn (see details below). To further test the reliability and validity of the CBS-G, additional separate samples were gathered from among people seeking treatment for compulsive buying, medical students, and psychiatric inpatients. The study was approved by the Institutional Ethics Committee of the University Hospital of Erlangen. After complete description of the study to the subjects, written informed consent was obtained from individuals in all samples.

Table 1
Compulsive Buying Scale (Faber and O'Guinn, 1992).

Number	Items
1	If I have any money left at the end of the pay period, I just have to spend it.
2a	Felt others would be horrified if they knew of my spending habits.
2b	Bought things even though I couldn't afford them.
2c	Wrote a check when I knew I didn't have enough money in the bank to cover it.
2d	Bought something in order to make myself feel better.
2e	Felt anxious or nervous on days I didn't go shopping.
2f	Made only minimum payments on my credit cards.

2.2.1. Population-based sample

A random sample of the German general population older than 14 years of age was selected with the assistance of a demographic consulting company (USUMA, Berlin, Germany). The sampling procedure followed the established guideline on how to construct a random population sample in Germany when no access to a population roster is possible. This so-called ADM sampling design involves three consecutive steps: in a first step, a grid of 258 regional sampling areas was randomly selected from a roster of such non-overlapping grids that have been centrally assembled to enhance representativeness in stratified regional sampling in Germany. A total of 210 sampling areas were located in the western part of Germany and 48 sampling areas in the eastern part of Germany (the former German Democratic Republic). Within all sampling areas, a random procedure to select households of the respective area was implemented as a second step. In a final third step, one member of the selected household fulfilling the inclusion criteria (age 14 or older, able to read and understand the German language) was sampled randomly in a pre-specified manner. The sampling procedure is designed to yield random samples representative in terms of age, gender, and education of the German population. A first attempt was made for 4205 addresses, of which 4055 were valid. If not at home, a maximum of three attempts was made to contact the selected person. The face-to-face interviews were conducted in May and June 2007 by 236 trained interviewers using a structured questionnaire which included the CBS-G and the PHQ-9. Prior to the interview, potential participants were informed about the purpose of the interview and informed consent was obtained.

The population-based survey met the ethical guidelines of the International Code of Marketing and Social Research Practice by the International Chamber of Commerce and the European Society for Opinion and Marketing Research and was approved by the Ethics Committee of the German Society of Psychology.

A total sample of 2510 individuals in the age range of 14–93 agreed to participate (participation rate: 61.9% of valid addresses). To compare the results with those obtained in the U.S. (Koran et al., 2006), all respondents younger than 18 were excluded ($n = 97$). Additionally, cases were dropped when data were missing. The final sample was weighted by household size and adjusted to external demographic variables (sex, age, and state of the respondent's residence within Germany) to achieve a representative sample. This provided a final weighted sample of 2350 individuals for analysis.

2.2.2. Treatment seeking sample of patients suffering from compulsive buying

Data from the CBS-G, the German Compulsive Buying Measurement Scale, and the Y-BOCS-SV were also obtained from 79 patients with compulsive buying (age: mean 40.0 years, S.D. = 10.6; 86% female) who were seeking treatment. This group was recruited through newspaper advertisements, local TV, and radio interviews inviting interested individuals to participate in a group therapy program for compulsive buying disorder at the University Hospital of Erlangen (Bavaria, Germany). Inclusion criteria were current compulsive buying problems according to the criteria of McElroy et al. (1994) and being 18 or older. Exclusion criteria were active suicidal ideation and current mania or hypomania. The treatment study and descriptive characteristics of the patients have been reported previously (Mueller et al., 2007b; Mueller et al., 2008). The assessments were completed between November 2003 and February 2008.

2.2.3. Medical students

Participants were 84 medical students (age: mean 24.3 years, S.D. = 2.2; 69% female) of the University of Erlangen who filled out the CBS-G. This screening was conducted in October 2007.

2.2.4. Psychiatric inpatients

Compulsive buying behavior was examined in 82 consecutive psychiatric inpatients (age: mean 34.8 years, S.D. = 11.2; 74% female) with the following primary diagnoses: affective disorders (46%), eating disorders (27%), anxiety disorders (10%), somatoform disorders (7%), and personality disorders (10%). The screening was conducted between January 2008 and June 2008.

2.3. Statistical analysis

All analyses were performed with SPSS 17.0 and Mplus 5.0. First, we analyzed the factor structure of the CBS-G with exploratory factor analysis, to determine whether the one factor structure previously reported by Faber and O'Guinn (1992) emerged in our German population-based sample. Second, a confirmatory factor analysis on the German dataset was used to confirm the unidimensionality of the original American scale. A Chi^2 goodness-of-fit test and four fit indices were used to assess model fit, including the Tucker–Lewis Index (TLI), the comparative fit index (CFI), the root mean square error of approximation (RMSEA), and the standard root-mean-square residual (SRMR). Guidelines suggest that models with TLI and CFI close to 0.95 or higher, RMSEA close to 0.06 or lower, and SRMR close to 0.08 or lower are representative of adequate fit of the model (Hu and Bentler, 1999).

To test the reliability, the test–retest reliability of the CBS-G was explored in the psychiatric inpatient sample, and the internal consistency was assessed in all samples by Cronbach's alpha coefficient. Convergent validity was assessed by calculating Pearson correlations between the CBS-G and the German Compulsive Buying Measurement Scale scores and the Y-BOCS-SV scores in the treatment seeking compulsive buying sample. To explore if the CBS-G total score is able to discriminate between self-identified compulsive buyers and other individuals the CBS-G total scores