

Compulsive buying in outline

Łukasz Zadka, Marcin Olajossy

2nd Department of Psychiatry and Psychiatric Rehabilitation, Medical University of Lublin

Summary

In spite of a hundred year long history of scientific research compulsive buying has been a hardly known phenomenon until today. Ambiguous scientific information makes it impossible to classify compulsive buying as a separate mental disorder. Recently many researchers have noticed phenomenological compatibility of compulsive buying with behavioural addictions. Nowadays, there is reasonable ground that compulsive buying disorder can be defined as an addiction. There are many similarities occurring between consumer type behaviours in compulsive buyers and a pathologic consumption of psychoactive substances which included the obsessive need to consumer or a compulsion to consume, personal dependence and loss of control over self-behaviour, as well as tendencies to the consumption increase. Compulsive buying disorder differs in its course from the compulsive behaviours. a strong compulsion to make a given activity, often impossible to restrain is associated with overwhelming but acceptable desire to purchase a specific item.

Due to the latest information about the described phenomenon, it has been decided to present current knowledge of adequate classifications, epidemiology and therapy of compulsive buyers. In the article authors' own standpoint as regards pathogenesis and potential risk factors was described.

Key words: compulsive buying, behavioural addictions

Introduction

A pathological context of shopping was mentioned for the first time in scientific journals at the beginning of 20th century by Bleuler and Kraepelin. In 1915 Kraepelin noticed a possible compulsivity of shopping describing this disorder as buying mania (oniomaniacs). 15 years later Bleuler considered this phenomenon as an ex ample of 'reactive impulse' and described this problem as 'impulsive insanity' [1].

A large interest in the medical aspect of compulsive buying was observed at the beginning of 1990s. Then this disorder gained a world-wide publicity, and the problem of compulsive buying was widely discussed in medical journals of many countries [1].

On the basis of their own observations and available references, O'Guinn and Faber tried to estimate a phenomenological character of compulsive buyers. Relying on their researches they concluded that disordered persons showed a higher level of compulsiveness, lower self-esteem and significantly bigger inclination to fantasies as regards the general population [2]. Disordered persons showed neurotic personality traits, whereas the act of compulsive buying itself often presented the analogy to psychoactive substances additions.

Christenson et al. in their research noticed that the problem of compulsive buying more often affected women and the disorder had a tendency to appear among young people. Purchased items were mainly parts of clothing, jewellery and cosmetics which usually did not have a practical application among the disordered [3].

In their researches, Black et al. reported that disordered persons experienced episodes of a low mood and co-existence of other mental disorders, especially depression and psychoactive substances additions [4].

Valence et al. defined three traits characteristic for the act of compulsive buying: a strong emotional irritation, high cognitive control and significant reactivity [5].

According to Scherhorna compulsive buying proved significantly more similarities to an addiction than only to a compulsion. A strong compulsion to make a given activity, often impossible to restrain, give a rational justification for such behaviour. An addiction is beyond self-control due to a desire which is overwhelming but acceptable by an addicted person, whereas it does not happen in case of compulsive behaviour where a compulsion to make a given activity is considered negative and not desired [6].

Currently, there are no official criteria accepted for recognising the subject disorder. Compulsive buying as a behavioural addiction was characterised by preoccupation with buying, shopping above the budget or buying unnecessary things. In case of compulsive buying the time needed for shopping was reported prolonged, often with an adverse impact on social and occupational functioning of the addicted persons [7].

Epidemiology

The occurrence of compulsive buying among a research population was quite varied. Depending on criteria of researched group selection a disorder spread was in the range from 3.6% to 31.9% [8]. A great discrepancy of conducted epidemiological researches was definitely related not only to the size of a researched group but also to cultural, social, geographical and socio-economic factors. Lejoyeux estimated the prevalence of compulsive buying in population as 1.1% [9]. In the latest researches the spread of the disorder grew significantly. Neuer et al. noted crucial disproportions in epidemiology of compulsive buying between the eastern and western part of Germany. In 1991 the frequency of the disorder occurrence was respectively 1% in the eastern

and 5.1% in the western part of Germany. In 2001 disproportions between latitudes in Germany were smaller; however, the frequency of the disorder occurrence increased significantly – 6.5% in the eastern and 8% in the western part of the country [10]. Similar percentage values for a German population were presented by Mueller et al. who, based on evaluation of 2,350 persons evaluated the frequency of compulsive buying occurrence as 6.9% [11]. In the United States, Koran et al. conducted researches on 2,513 adults estimating the disorder occurrence to be 5.8% [12]. In Spain compulsive buying affected 7.1% of a researched population [8].

Compulsive buying affected women more often than men. Based on results of conducted researches it was concluded that women might be even 94% of all addicted [4]. This disorder tended to affect young people as the age given the most often at the beginning of the disease was in the range 17.5–19 years [3, 13, 14].

The fact of the disorder co-existence with other mental disorders is also worth noticing. McElroy et al. in their researches conducted on psychiatric patients noticed a considerable comorbidity of compulsive buying with mood disorders and anxiety disorders respectively in 95% and 80% cases. The thesis' authors also considered the relation between compulsive buying symptoms and family relationship – in patients with compulsive buying symptoms first degree relatives very often revealed mood disorders [15]

Lejoyeux et al. stated a more frequent occurrence of compulsive buying in depressive patients, where the frequency of disorders was evaluated as 31.9% [16]. This value considerably exceeded the spread of compulsive buying in a general population.

Characteristics of compulsive buyers

McElroy et al. proposed diagnostic criteria for compulsive buying which included the following parameters:

1. Faulty preoccupation with buying or shopping, or abnormal urge and behaviours towards buying, fulfilling at least one of the criteria below:
 - Frequent preoccupation with buying or urge to shopping which was experienced as an irresistible, intrusive and senseless activity;
 - Frequent shopping for a price exceeding an acceptable budget or frequent shopping for longer periods than planned;
2. Preoccupation with buying as well as urges and behaviours related to a buying action caused crucial dissatisfactions, absorbed much time, had significant influence on social and occupational functioning (indebtedness, bankruptcy, etc.);
3. Episodes of compulsive buying did not occur during hypomanic periods and mania episodes [15].

On the basis of conducted researches it could be concluded that compulsive buyers are persons within the age range between the second to the fourth life decade, mainly women, who often show traits of neurotic personality and impulse control disorders.

Addicted persons show repetitious and intrusive urges to shopping, often revealed during the stay in big shopping malls. The action of shopping is very often treated as a method of coping with stress as it allows abreacting and lowering tension.

During buying episodes both positive and negative emotions might occur. Before a scheduled purchase or in the course of this activity compulsive buyers are accompanied with the feeling of satisfaction and pleasure, usually short-time, which give way to guilt feeling [8]. Faber and Christenson drew attention to the fact that the activity of compulsive buying itself may also be preceded by negative emotionality as compulsive buyers are characterised by a higher degree of aggressiveness a moment before starting or during this activity [17]. Disordered persons often show a low self-esteem, emotional deficiencies, impulsivity and addiction to psychoactive substances [4, 8, 18]. In their work, Derbyshire et al. noted a higher impulsivity and worse decision making in comparison to a control group. Worsening of spatial operating memory, weakened impulsivity control and weaker ability to risk evaluation are traits proved in compulsive buyers [19].

Purchased items are most often cheap. Purchased things are more like trophies which guaranteed temporary, personal satisfaction of a buyer and very often do not have any utility values. Shopping items are often returned to sellers or thrown away by a buyer just after their purchase. It happened that the attractiveness of a given item increases along with the prestige of a producer brand because for compulsive buyers shopping is an occasion to impress others. Compulsive buying may be then a process which increases self-esteem [9, 20, 21]. Compulsive buying of a bigger amount of items usually generate excessive expenditure which very often lead to legal, marriage and financial problems [3, 9].

Potential risk factors

Compulsive buying as a pathologic phenomenon has been little known until today. Difficulties occurred in evaluation of factors which may significantly influence revealing disorder symptoms. Nevertheless in medical journals information suggesting participation of some factors in a pathogenesis of the described phenomenon occur more and more often.

Dopamine receptor agonists are medicines applied in Parkinson's disease. Weintraub et al. reported that a dopamine therapy showed positive correlation with the occurrence of impulse control disorder, including compulsive buying. In patients taking dopamine medicines the frequency of compulsive shopping was 7.2% against 2.9% in persons taking other medicines [22]. The above-mentioned relation requires conducting further researches because – as suggested by Gendreau and Potenza – the frequency of disorder occurrence is similar as the one in a general population [23].

Taking antiviral drugs is associated with the occurrence of neuropsychiatric disorders even in 60% of patients. In the case described by Karakaş et al., the application of ribavirin revealed symptoms of compulsive buying. a female patient received a prophylactic drug in the dose of 1,000 mg daily for the period of seven days [24].

Psychoactive substances application shows a certain association with compulsive buying [1]. In their research Lejoyeux et al. reported that in patients diagnosed with schizophrenia taking cannabis compulsive buying occurred significantly more frequently than in a control group [25].

Aggressive neuromarketing presents products in the light of identification with a high social status, whereas omnipresent advertisements promote specified products, very often associating their offer with special and unique traits for a buyer if he buys the product. Therefore, shopping is perceived as done more and more often only to satisfy a buyer's own ego, making him better from the rest of a society. In that respect shopping is a form of a gratification.

Contemporary advertisement "attract" a customer what may have a destructive influence on persons vulnerable to such suggestions [26].

In researches of Samsone et al. trauma experienced in childhood seems to play a crucial role in revealing traits characteristic for persons who shop compulsively. The authors evaluated association of different kinds of trauma experienced before the age of 12 with compulsive buying. Emotional overuse towards children and the fact of experiencing violence itself indicate a positive correlation with the score in CBS scale [27].

Neuropsychiatric basis of compulsive buying

Pathogenesis of compulsive buying is currently little known. Most researchers having in mind a phenomenological similarity and co-occurrence of this disorder with behavioural addictions included it in this group of disorders [7, 28, 29]. Neuroanatomic basis of behavioural addictions is related to ventral striatum, particularly with nucleus accumbens, orbitofrontal cortex, cingulate cortex, amygdalae and hippocampus [30].

A new stimulus leads to the phase of dopamine release in a ventral tegmental area to nucleus accumbens, amygdalae and hippocampus. It is considered that a dopaminergic signal promotes association teaching. The role of orbitofrontal cortex and amygdalae refer to associating signals of reward anticipation with positive emotions evoked by a real gratification. A long-term memory in hippocampus shows a close relation with dopaminergic signalling, and cingulate cortex is responsible for the connection between a reward system and an action. In a healthy brain activity of a reward system is subject to a frontal cortex regulation; however, this functions improperly in behavioural addictions [30]. Researches of functional magnetic resonance imaging in compulsive buyers reported a changeable activity in the area of insula and nucleus accumbens [31].

A high degree of co-occurrence of mood disorders with compulsive buying may suggest crucial meaning of prefrontal cortex in pathogenesis of this behavioural addiction.

In many researches prefrontal cortex activity had a definite relation with depression [32], a lowered mood, in accordance with results presented above, is the most common mental disorder co-occurring with compulsive buying.

Prefrontal cortex play a crucial role in the decision making process, it particularly refers to the range of ventromedial part [33]. It is worth emphasising that dorsolateral pre-frontal cortex is responsible for a precise analysis of problematic situations and for the receipt and interpretation of stimuli coming from the environment [33]. In compulsive buyers worsening within the scope of decision making and weaker ability to risk evaluation were reported [19].

Therapeutic options

There are no official recommendations as to the treatment of compulsive buyers. All researches published so far require continuation and a broader clinical context. The review of available journals suggests that psychotherapeutic interventions and some medicines may be effective.

In 2006 Mitchell et al. confirmed the effectiveness of cognitive behavioural therapy in relation to 28 patients included in the treatment. The improvement in the 6 month period was noted on the basis of the lower number of general episodes of compulsive buying and time devoted to shopping. Suitability of Cognitive Behavioural Therapy (CBT) was confirmed based on scoring gained in Yale-Brown Obsessive-Compulsive Scale – Shopping Version (YBOCS-SV) and CBS [34].

The remaining randomised researches suggesting effectiveness of CBT were conducted by Müller et al. who included in the therapy program respectively 31 and 56 patients in different intervals. The authors reported effectiveness of both individual and group CBT among compulsive buyers [35, 36].

Effectiveness of pharmacotherapy was confirmed in randomised researches of double blind trial with citalopram and placebo. Citalopram was administered in the doses from 20 mg to 60 mg daily. The drug appeared to be effective in the compulsive buying therapy and gained a crucial advantage over placebo. The therapy with placebo was related to exacerbation and illness recurrence, which was not reported with citalopram [37].

For comparison, Koran et al. also conducted identical researches with escitalopram; however, in this case expected clinical effects were not received and escitalopram proved to be ineffective [38].

There were single reports on the efficiency of topiramate. In 2007 Guzman et al. reported a case of an efficient pharmacological intervention in 37 year old woman. Topiramate was applied in the doses from 50 to 150 mg, and after a month therapy a resolution of compulsive buying symptoms was received [39]. The effectiveness of topiramate in compulsive buying was also reported by Ye et al. Pharmacological treatment and psychotherapy applied so far in 42 years old patient proved to be of no effect. Topiramate was titrated to the dose equal with 100 mg/d. The functioning condition of a patient improved considerably already on the 4th day after the application of the initial drug dose. The patient was able to control her urge to shop and the drug efficiency was confirmed on the basis of the scoring evaluation in the YBOCS-SV conducted after 6 weeks of therapy [40].

Grant et al. suggested positive effects of memantine. The drug was received by 9 patients with compulsive buying (CB) diagnosis in the doses from 10 to 30 mg daily. The applied treatment was well tolerated by patients, and the improvement within the scope of scoring in the YBOCS-SV, reduction of time devoted to shopping and decrease of expenditures were received after 10-week period [41].

Some researchers noted positive influence of naltrexone [7, 42]. It was considered that an opioid system is a crucial part of a brain reward system. Naltrexone as an opioid receptor antagonist may show a positive influence on motivation and emotional processes [43].

Psychological aspects of compulsive buying

A significant percentage of purchases is conditioned by an appropriate motive, the purpose of which is to achieve the desired result. Psychological classification takes into account several types of motivation:

- Hedonistic motivation: purchase is perceived as an enjoyable process of symbolic meaning. During the act of buying, no feeling of guilt is present, and the impulse is often associated with a strong emotional component;
- Impulsive motivation: closely associated with impulse control disorders; formed under the influence of external stimuli; the execution of the act of buying is more dependent on the affective component, rather than it is on judgment; it is usually determined by weak willpower and compulsion to purchase;
- Compensatory motivation: purchased items serve as props increasing self-esteem; usually applies to people with low self-esteem;
- Compulsive motivation: internal factors are important here, including intrusive thoughts and anxiety; the main purpose of the occurrence of compulsive behaviour is the reduction of tension; shopping may in this case constitute the means of escaping the individual's problems.
- Emotional and social motivation: the feeling of pleasure in purchasing comes from the aesthetic features of the acquired inanimate matter or from human contact occurring while shopping;
- Motivation related to identity: associated with externalising one's own "self" through the acquisition of specific items [44, 45].

The descriptive relationships described above refer to specific psychological aspects of purchasing. Based on the data mentioned previously, an assumption was made that compulsive buying disorder may not be permanently assigned to any of the above-mentioned aspects. An opinion was formulated, that main incentive for pathological buying is the desire to improve one's self-esteem, reduction of increasing tension and achieving mood improvement as a result of taking certain actions. Compulsive buying is an extremely complex and poorly understood disorder. With this in mind, multifactorial conditioning of compulsive buying was suggested.

Cultural commercialisation of the society and the media can have a significant impact on the identity of an individual. Apart from ontogeny, also acquired life experience is important for human development. External factors that are determined by the environment may cause acquisition of misconceptions and making wrong decisions.

Consumer socialisation process can be analysed from the perspective of a number of important factors. Age, limitations of the learning process, the influence of third parties, manner of acquisition of certain values and individual determinants emphasise the significance of a subject in relation to family and the environment.

The model of socialisation adopted by the society, whereby shopping “should” be dealt with by women, may explain the previously mentioned gender inequalities. Another possibility is the motivation for shopping being different in men and in women. Research carried out on the Polish population has shown that women make purchases based mostly on the features of the social-emotional model, whereas men appreciate a certain element of competition associated with the purchase of an object and the values that emphasise its uniqueness. In the Polish society, similarly as in a study conducted in Western countries, a frequent object of compulsive shopping was clothing. For young Poles, wearing designer clothing was closely related with social status [46].

In addition, excessive consumerism is another important issue. Emergence of new shopping malls, the emotional component of advertising and broadly defined materialism may pose a potential medium facilitating the disclosure of phenotypes characteristic of compulsive shopping.

Fundamental significance of the above-stated aspects refers to the positive results of the previously mentioned psychotherapeutic interventions in the field of cognitive-behavioural therapy. Psychoeducation, the correction of erroneous beliefs and behavioural training may have substantial therapeutic meaning.

Kellett and Bolton presented an interesting cognitive model of compulsive buying. They have proposed four key stages of the disorder. The first is the past – a stage accounting for all the risk factors affecting early human development. According to the authors, dysfunctional family, co-occurrence of mental illness in the family, the caregivers’ co-dependency on psychoactive substances and any improper behavioural patterns in parents are of great importance. The second stage is determined by the internal and external risk factors which include, among others, advertising, the use of credit cards, depressed mood, anxiety disorders or a sense of dissatisfaction with oneself. Third stage is characterised by the actions taken by a compulsive buyer while shopping. The importance of the emotional, behavioural, and cognitive component was recognised. In fourth phase, the post-shopping condition of compulsive buyers was characterised. Execution of the act (buying an item) reveals negative emotional state and feeling of guilt, which results in the condition of the affected individual being identical with the second phase. Due to the compulsive buyer’s depressed mood and malaise, the described condition may occur periodically [47]. Most of the authors’ assumptions are consistent with the current state of knowledge.

Certain conceptions attempt to justify the more frequent co-occurrence of compulsive buying and mental illnesses solely by functional determinants. In accordance with such assumptions, compulsive buying in the affected individuals is a form of auto therapy [44]. The above-mentioned hypothesis does not appear to be justified, as in behavioural terms, compulsive buying shows the characteristics of addiction. Partially, such relationship can be seen in the cognitive model of compulsive buying described here. Identical relationships and similar symptomatology are also found in other behavioural addictions [7].

Compulsive buying in terms of addiction

This paper presents compulsive buying as behavioural addiction. While performing the act, compulsive buyers usually feel a strong desire and compulsion to make the purchase, and are having problems with self-control. In addition, loss of existing interests and priorities was observed in a study conducted on Polish population of compulsive buyers [46]. Particularly noteworthy is the change of mood during the act – planning of shopping and the implementation of previous designs generally result in mood improvement, whereas the accomplishment of intentions usually brings the opposite effect of depressed mood, lowered self-esteem and the feeling of guilt. The result of the act is similar to and characteristic of the withdrawal syndrome. Typical of compulsive buyers is the recurrence of the discussed purchasing patterns, which often lead to unpleasant financial, legal and social consequences.

References

1. Black WD. *a review of compulsive buying disorder*. World Psychiatry 2007; 6: 14–18
2. O’Guinn TC, Faber RJ. *Compulsive buying: a phenomenological exploration*. J. Consum. Res. 1989; 16(2): 147–157.
3. Christenson GA, Faber RJ, Zwaan M, Raymond NC, Specker SM, Ekern MD. et al. *Compulsive buying: descriptive characteristics and psychiatric comorbidity*. J. Clin. Psychiatry 1994; 55(1): 5–11.
4. Black DW, Repertinger S, Gaffney GR, Gabel J. *Family history and psychiatric comorbidity in persons with compulsive buying: preliminary findings*. Am. J. Psychiatry 1998; 155(7): 960–963.
5. Valence G, d’Astous A, Fortier L. *Compulsive buying: Concept and measurement*. J. Consum. Policy 1988; 11(4): 419–433.
6. Scherhorn G. *The addictive trait in buying behaviour*. J. Consum. Policy 1990; 13(1): 33–51.
7. Grant JE, Schreiber LRN, Odlaug BL. *Phenomenology of behavioural addictions*. Can. J. Psychiatry 2013; 58(5): 252–259.
8. Otero-López JM, Villardefrancos E. *Prevalence, sociodemographic factors, psychological distress, and coping strategies related to compulsive buying: a cross sectional study in Galicia, Spain*. BMC Psychiatry 2014; 14: 101.

9. Lejoyeux M, Adès J, Tassain V, Solomon J. *Phenomenology and psychopathology of uncontrolled buying*. Am. J. Psychiatry 1996; 153(12): 1524–1529.
10. Neuner M, Raab G, Reisch L. *Compulsive buying in maturing consumer societies: an empirical re-inquiry*. J. Econ. Psychol. 2005; 26: 509–522.
11. Mueller A, Mitchell JE, Crosby RD, Gefeller O, Faber RJ, Martin A. et al. *Estimated prevalence of compulsive buying in Germany and its association with sociodemographic characteristics and depressive symptoms*. Psychiatry Res. 2010; 180: 137–142.
12. Koran LM, Faber RJ, Aboujaoude E, Large MD, Serpe RT. *Estimated prevalence of compulsive buying behavior in the United States*. Am. J. Psychiatry 2006; 16: 1806–1812.
13. Miltenberger RG, Redlin J, Crosby R, Stickney M, Mitchell J, Wonderlich S. et al. *Direct and retrospective assessment of factors contributing to compulsive buying*. J. Behav. Ther. Exp. Psychiatry 2003; 34: 1–9.
14. Schlosser S, Black DW, Repertinger S, Freet D. *Compulsive buying: demography, phenomenology, and comorbidity in 46 subjects*. Gen. Hosp. Psychiatry 1994; 16: 205–212.
15. McElroy SL, Keck PE, Pope HG, Smith JMR, Strakowski SM. *Compulsive buying: a report of 20 cases*. J. Clin. Psychiatry 1994; 55: 242–248.
16. Lejoyeux M, Tassain V, Solomon J, Adès J. *Study of compulsive buying in depressed patients*. J. Clin. Psychiatry 1997; 58(4): 169–173.
17. Faber RJ, Christenson GA. *In the mood to buy: differences in the mood states experienced by compulsive buyers and other consumers*. Psychol. Mark. 1996; 13: 803–819.
18. Williams AD, Grisham JR. *Impulsivity, emotion regulation, and mindful attentional focus in compulsive buying*. Cogn. Ther. Res. Cogn. Ther. Res. 2012; 36: 451–457.
19. Derbyshire KL, Chamberlain SR, Odlaug BL, Schreiber LR, Grant JE. *Neurocognitive functioning in compulsive buying disorder*. Ann. Clin. Psychiatry 2014; 26(1): 57–63.
20. d'Astous A. *An inquiry into the compulsive side of "normal" consumers*. J. Consum. Policy 1990; 13: 15–31.
21. Lejoyeux M, Mathieu K, Embouazza H, Huet F, Lequen V. *Prevalence of compulsive buying among customers of a Parisian general store*. Compr. Psychiatry 2007; 48(1): 42–46.
22. Weintraub, D, Koester, J, Potenza MN, Siderowf AD, Stacy M, Voon V. et al. *Impulse control disorders in Parkinson disease: Across-sectional study of 3090 patients*. Arch. Neurol. 2010; 67(5): 589–595.
23. Gendreau KE, Potenza MN. *Detecting associations between behavioral addictions and dopamine agonists in the Food & Drug Administration's Adverse Event database*. J. Behav. Addict. 2014; 3(1): 21–26.
24. Karakaş Uğurlu G, Uğurlu M, Çayköylü A. *The emergence of obsessive compulsive and compulsive buying symptomatology after acute stress and short-term use of ribavirin: case reports*. Ther. Adv. Psychopharmacol. 2013; 3(4): 246–250.
25. Lejoyeux M, Basquin A, Koch M, Embouazza H, Chalvin F, Ilongo M. *Cannabis use and dependence among French schizophrenic inpatients*. Front. Psychiatry 2014; 5: 82.
26. Mikołajczak-Degrauwe K, Brengman M. *The influence of advertising on compulsive buying – The role of persuasion knowledge*. J. Behav. Addict. 2014; 3(1): 65–73.
27. Sansone RA, Chang J, Jewell B, Rock R. *Childhood trauma and compulsive buying*. Compr. Psychiatry 2012; 53(5): 554–561.

28. Grant JE, Brewer JA, Potenza MN. *The neurobiology of substance and behavioral addictions*. CNS Spectr. 2006; 11(12): 924–930.
29. Karim R, Chaudhri P. *Behavioral addictions: an overview*. J. Psychoactive Drugs 2012; 44(1): 5–17.
30. Probst CC, Eimeren T. *The functional anatomy of impulse control disorders*. Curr. Neurol. Neurosci. Rep. 2013; 13(10): 386.
31. Leeman, RF, Potenza MN. *a targeted review of the neurobiology and genetics of behavioral addictions: An emerging area of research*. Can. J. Psychiatry 2013; 58(5): 260–273.
32. Iwabuchi SJ, Krishnadas R, Li C, Auer D, Radua J, Palaniyappan L. *Localized connectivity in depression: a meta-analysis of resting state functional imaging studies*. Neurosci. Biobehav. Rev. 2015; 51: 77–86.
33. Kałwa A. *Impulsivity and decision making in alcohol-addicted individuals*. Psychiatr. Pol. 2013; 47(2): 325–334.
34. Mitchell JE, Burgard M, Faber R, Crosby RD, de Zwaan M. *Cognitive behavioral therapy for compulsive buying disorder*. Behav. Res. Ther. 2006; 44(12): 1859–1865.
35. Müller A, Mueller U, Silbermann A, Reinecker H, Bleich S, Mitchell JE. et al. *a randomized, controlled trial of group cognitive-behavioral therapy for compulsive buying disorder: post-treatment and 6-month follow-up results*. J. Clin. Psychiatry 2008; 69(7): 1131–1138.
36. Müller A, Arikian A, Zwaan M, Mitchell JE. *Cognitive-behavioural group therapy versus guided self-help for compulsive buying disorder: a preliminary study*. Clin. Psychol. Psychother. 2013; 20(1): 28–35.
37. Koran LM, Chuong HW, Bullock KD, Smith SC. *Citalopram for compulsive shopping disorder: an open-label study followed by double-blind discontinuation*. J. Clin. Psychiatry 2003; 64(7): 793–798.
38. Koran LM, Aboujaoude EN, Solvason B, Gamel NN, Smith EH. *Escitalopram for compulsive buying disorder: a double-blind discontinuation study*. J. Clin. Psychopharmacol. 2007; 27(2): 225–227.
39. Guzman CS, Filomensky T, Tavares H. *Compulsive buying treatment with topiramate, a case report*. Rev. Bras. Psiquiatr. 2007; 29(4): 383–384.
40. Ye L, Kadia S, Lippmann S. *Topiramate and compulsive buying disorder*. J. Clin. Psychopharmacol. 2014; 34(1): 174–175.
41. Grant JE, Odlaug BL, Mooney M, O'Brien R, Kim SW. *Open-label pilot study of memantine in the treatment of compulsive buying*. Int. J. Psychiatry Clin. Pract. 2013; 17(1): 73–76.
42. Donahue CB, Odlaug BL, Grant JE. *Compulsive buying treated with motivational interviewing and imaginal desensitization*. Ann. Clin. Psychiatry 2011; 23(3): 226–227.
43. Bieńkowski P. *Pharmacological features of naltrexone and its use in the treatment of alcohol dependence*. Psychiatr. Pol. 2013; 47(1): 117–26.
44. Dittmar H. *Compulsive buying – a growing concern? An examination of gender, age, and endorsement of materialistic values as predictors*. Br. J. Psychol. 2005; 96(4): 467–491.
45. Zawadzki R, Chuchra M. *Role of motivational factors in the etiology of uncontrolled spending*. Curr. Probl. Psychiatry 2010; 11(3): 211–218.
46. Badora B, Gwiazda M, Herrmann M, Kalka J, Moskalewicz J. *Oszacowanie rozpowszechnienia oraz identyfikacja czynników ryzyka i czynników chroniących: hazardu, w tym hazardu prob-*

lemowego (patologicznego) oraz innych uzależnień behawioralnych. Warsaw: CBOS Public Opinion Research Centre; 2012. www.kbpn.gov.pl/portal?id=15&res_id=2264442 [retrieved: 29.11.2015]

47. Kellett S, Bolton JV. *Compulsive buying: a cognitive-behavioural model*. Clin. Psychol. Psychother. 2009; 16(2): 83–99.

Address: Łukasz Zadka
2nd Department of Psychiatry and Psychiatric Rehabilitation
Medical University of Lublin
20-439 Lublin, Głuska Street 2