

Calculation of Costs of Mental Bulimia: Vomited Money

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Abstract: Bulimia nervosa is one form of binge eating disorder (BED) and is characterized by repeated and frequent intake of large amounts of food in a short period of time. The aim of this article is to conceptualize “vomited money”, which could be resonant in many ways, and the emerging data on this concept can fundamentally add to the economic importance and seriousness of this issue. The methodology of our research is based on the Cost of Illness (COI), which is a descriptive analytical approach focusing on the calculation of the economic costs of the researched disease. The basic approach is to include direct costs - costs incurred for health care and indirect costs resulting from lost earnings, reduced work productivity, or morbidity. For calculation of direct costs data from VZP were used. For calculation of “vomited money” a focused qualitative experiment was performed. Based on our research with 6 respondents in different stages of bulimia, the share of “vomited money” exceeds the expenditures of health insurance funds, so we can say that “vomited money” is a relevant cost and should be considered as part of COI methodology when calculating the costs of mental bulimia.

Keywords: mental bulimia; cost of illness; vomited money

JEL Classification: I10; I11; I13

1. Introduction

Bulimia nervosa is not only a serious psychiatric illness, but according to Tannous et al. (2022) this is an economically burdensome situation. In 2021, eating disorders in Czech Republic reached almost CZK 70 million. This is based on VZP data, with 60% market share the biggest insurer in the country, in which, eating disorders represented CZK 41.6 million (VZP, 2022). And the costs rise in time, compared to 2017, in 2021 the costs are higher by 62% and the number of patients rose from 658 to 1,034. So, this means direct costs at CZK 40,232 (1,676 EUR) annually per person.

According to the European Commission (2019) eating disorders (incl. bulimia) affect around 20 million people in Europe with an estimated costs of EUR 1 trillion per year.

Bulimia nervosa is one form of binge eating disorder (BED) and is characterized by repeated and frequent intake of large amounts of food in a short period of time (roughly two hours). Episodes of overeating can repeat up to two to ten times a day. This state is followed by a combination of activities aimed at reducing weight and getting rid of all the calories taken in.

Starting with vomiting, followed by drastic diets and hunger strikes, excessive exercise, diuretics, and laxatives. Typically, feelings of humiliation, depression and self-condemnation appear after overeating (Abraham et al., 2006; Petr et al., 2014). End of life relapses and connections with other types of PPP and addictions are common (Pokrajac-Bulian et al., 2015; Faleide et al., 2010).

Not only women suffer from bulimia, but there are also known cases of bulimic men (Papežová, 2012; Jenkins et al., 2011). In Czech Republic, roughly one in twenty girls and young women are affected (Anabell, 2018). In the general population, the prevalence varies on average between 2-5% (Hort et al., 2008; Papežová, 2012).

In reality, the prevalence could be double. Every second woman is dissatisfied with her proportions and weight and often tends to stick to various diets, exercises, etc. Up to about 10% then think about vomiting food to get rid of excess kilos (Krch, 2008; Button et al., 2010).

Overall, the disease disrupts the normal course of life, contributing to desocialization, postponement of duties, loss of family and other ties, up to loss of productivity and work ability, i.e., economic inactivity (Winkler, 2014).

The aim of this article is to focus on “visible” and “invisible” costs of mental bulimia using the Cost of Illness approach. The main contribution of this article is of methodological nature to (1) identify new types of costs that are bulimia specific and (2) running a small experiment to check whether these costs are relevant to the Cost of Illness approach. More specifically, in this article we would like to conceptualize “vomited money”, which could be resonant in many ways, and the emerging data on this concept can fundamentally add to the economic importance and seriousness of this issue.

2. Methodology

Cost of Illness (COI) is a descriptive analytical approach focusing on the calculation of the economic costs of the researched disease (Jo, 2014). The basic approach is to include direct costs - costs incurred for health care (diagnostic and imaging examinations, costs for drugs, rehabilitation, outpatient treatment, hospital stay, transport to a medical facility, home improvement, diet for the sick, etc.) and indirect costs resulting from lost earnings, reduced work productivity, morbidity, and possible disability of the caregiver.

Some approaches include a third item, namely intangible costs – losses in terms of reduced length and quality of subsequent years of life. All these types of costs are, if possible, quantified in monetary terms. Data can be obtained from insurance companies, from ÚZIS, from employers and direct caregivers from a questionnaire survey (Larg, 2011).

For calculation of direct costs data from VZP will be used (VZP, 2022).

For calculation of “vomited money” a focused qualitative experiment will be chosen as main research approach. The sample for the research investigation are 6 selected respondents, each of them representing one of the stages of mental bulimia and they will be presented individually in their personal case histories based on partially conducted interviews.

All respondents are from center Anabell (Praha, Brno, Ostrava) and all the interviews were conducted 2022. The characteristics of respondents are in Table 1.

Table 1. Characteristics of the respondents by mental bulimia stage and activity profile

Respondent	Stage	Activity profile
1st respondent	onset, duration up to six months after the outbreak	high school student
2nd respondent	bulimia - duration between 1-5 years	university student
3rd respondent	bulimia lasting more than 5 years	working person
4th respondent	a person after several years of relapse	an adult
5th respondent	-bulimic attacks for 1 year, previously anorexic tendencies for 3 years preceding it bulimic stage lasting 4 years	male with combined form of PPP
6th respondent	bulimia lasting 3 years with frequency of attacks 2-3 times per month	n. a.

For gathering data, a semi-structured questionnaire will be used to complete and obtain accurate data, corresponding to the COI method. The questionnaire is focused on many clinical and economical aspects of mental bulimia, for this article, we will be focusing solely on “vomited money”.

The relevance of the “vomited money” will be compared to overall direct costs of mental bulimia to evaluate the relevance of this type of costs in COI methodology.

3. Results

The answers from interviews were clustered into 5 groups: (1) dealing with food eaten, (2) change in psychic, (3) financial costs in one month, (4), implication to family life and (5) work and school. Here, in this article, we will focus on dealing with food eaten (qualitative results) and financial costs (quantitative results) to bring evidence of “vomited money”.

3.1. Qualitative Results

Regarding to the 6 respondents, here are the main messages, how they are dealing with food eaten. The answers are mixed, and the order of answers does not correspond to the order of respondents in Table 1:

- *“I'm throwing up. When I can't throw up, I can get drunk to the point of nausea so that it comes out. For about two months, I took 50 drops of Guttalax every time I vomited. I took it as insurance. Honestly, it wasn't very pleasant, and after a while I came to the fact that it was useless. And also, as a poor student, I can't afford to stuff money into gluttony and Guttalax.”*
- *“I put my fingers in my mouth and start to suffer. It is not possible anymore. Sometimes, in a desperate attempt to vomit, I injure my pharynx and it hurts. Sometimes it catches fire. After a while of trying, it usually gets going. It depends on what I eat. I already know in what order I must eat the food so that it goes out more easily. I'll hurt my hands too. My joints are dry and cracked. Vomiting lasts for 2.5 hours.”*
- *“I vomit and take a bottle of laxative every day. At every opportunity.”*
- *“I don't eat anything except low-calorie foods, the so-called “safe food”, which gives about 100 kcal per serving. If I eat something more, it's enough to feel full even after fruits and vegetables, mentally I can't stand it. I just pull my hair up into a rubber band and go to the bathroom to throw up.”*

- *"I'm throwing from time to time, now I try to hold it in for more days each time, then it's better to vomit. It was a plague every day and it didn't work. I recently tried such a salt cleanse - a person gradually drinks x liters of salty water in a short time. It drives it through and everything that is in the intestines goes. It's a hum, but I can't help it."*
- *"Remorse and panic attacks come first, then vomiting, then self-harm a few times."*

Based on the interviews with 6 respondents we can formulate a strong hypothesis for further research, that vomiting food is a daily routine for people suffering from this disease. This will be relevant in the economic context, that every food that was vomited, needed to be eaten first. And paid.

3.2. Quantitative Results

Financial hardship of bulimia:

- *"When I'm at home, for me at all. I eat what I find in the pantry, in the freezer, my mother makes, my grandmother brings. Although, these are finances of my parents. I never thought about it this way. Terrible. It will be a lot. I don't buy much myself anymore, I didn't get along with money."*
- *"On average, about a hundred a day + what I eat at my parents' or visits. That's enough too." (approx. 3,000 CZK / month)*
- *"I don't always throw up daily, sometimes several times. Well, it can be around 700-800 CZK per week and that is about half of what I eat. I also put a lot of money into supplements - guttalex, dehydrating pills, etc., which also gives me a decent pocketbook per month, about 600 CZK." (approx. 2,800–3,200 CZK / month)*
- *"I don't eat much, I stick to the low-carb, low-sugar, zero-kcal ones. Well, it also costs something, maybe even more. I estimate the waste of food (money) for 2,500–3,000 CZK per month." (approx. 2,500–3,000 CZK / month)*
- *"It's a lot, really lot. One day I lost five hundred crowns and threw it all up. I went to the store thinking I was going to throw it all away. I have such days almost most of the month. Realistically, it will definitely be over 7,000 per month, and that's just for food." (approx. 7,000 CZK / month)*
- *"We calculated it together once, as far as I remember, it was around 4.5 thousand on average, right? There were also months around 1,000 CZK, but also around 8,000 CZK." (approx. 4,500 / month)*

Now these results show that people suffering from mental bulimia can spend a lot of money that is later being vomited. More precisely, based on these 6 respondents, it can be from 2,500 CZK up to 7,000 CZK per month. When calculating an average from these 6 respondents, we can come to an average of 4,050 CZK per month. So, "vomited money" may represent 48,600 CZK annually.

It is very important to put this cost into context with expenditures of health insurance funds. Based on data from VZP (2022), in 2021 the overall costs on eating disorders (anorexia, bulimia, binge eating) represented 41.6 million CZK with a prevalence of 1,034 patients registered in VZP. This would mean an average cost 40,232 CZK annually. So, the share of "vomited money" (48,600 CZK annually) exceeds the expenditures of health insurance funds

(40,232 CZK annually), so we can say that “vomited money” is a very relevant cost and should be considered as part of COI methodology when calculating the costs of mental bulimia.

4. Discussion

Calculation of economic costs of eating disorders (incl. bulimia) can be complete only when all, direct and indirect costs are incorporated. Under the economic burden of bulimia, we can include the use of resources in the healthcare sector, healthcare costs and social costs (Ágh, 2016).

Most of the research conducted in the field of eating disorders is focused on direct medical costs, which are the easiest to calculate and best proven. The direct health care costs of bulimia are calculated at EUR 3,294 per year (Pohjolainen et al., 2010). Another study talks about EUR 1,762 per year when including different direct healthcare cost items (Grenon et al., 2010). The research of Prof. Crow (2009), focusing on the calculation of direct non-medical costs, speaks of an amount of EUR 4,735 per year. There is great variability in the procedure for calculating individual costs, and therefore also possible room for further investigation. In Czech Republic, the direct healthcare costs paid by health insurance funds are around 1,655 EUR annually.

Our research goes beyond of direct costs and focuses on indirect costs, especially on a new category of costs, so called “vomited money”. Based on our research with 6 respondents, we can say, that “vomited money” can be a very significant part of total costs. More specifically, in our research we showed, that “vomited money” (48,600 CZK annually) can be even higher than the expenditures of health insurance funds (40,232 CZK annually). In this context, “vomited money” is an important part of costs should be incorporated into the COI methodology as part of the indirect costs.

The main limitation of this article is the sample size, since we had only 6 respondents. On the other hand, the answers on “vomited money” are quite concentrated and can be on average compared to average expenditures of health insurance funds. Further research will be needed to confirm or hypotheses on “vomited money” on larger scale of patients.

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