

# Rozpowszechnienie jadłowstrętu psychicznego i bulimii psychicznej w Europie Wschodniej

## Prevalence of anorexia nervosa and bulimia nervosa in Eastern Europe

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### Streszczenie

Częstość występowania zaburzeń odżywiania może się znacznie różnić w zależności od populacji. Konieczne jest oszacowanie częstości występowania jadłowstrętu psychicznego i bulimii psychicznej na całym świecie, zwłaszcza poza krajami Europy Zachodniej, Ameryką i Australią, gdzie przeprowadzono większość badań epidemiologicznych. Dlatego celem niniejszego przeglądu była ocena częstości występowania jadłowstrętu psychicznego i bulimii psychicznej w krajach Europy Wschodniej. Na podstawie Atlasu Świata uwzględniliśmy 10 krajów: Białoruś, Bułgarię, Czechy, Węgry, Polskę, Mołdawię, Rumunię, Rosję, Słowację i Ukrainę. Przeszukano literaturę w PubMed i PsycInfo. Dodatkowo uzupełniono wyniki wyszukiwaniami w Google Scholar. Uwzględniliśmy publikacje (artykuły i/lub streszczenia) wyłącznie w języku angielskim. Przed transformacją demokratyczną w 1989 roku w Europie Wschodniej nie badano jadłowstrętu psychicznego i bulimii psychicznej. Z aktualnego przeglądu wynika, że w ciągu ostatnich trzech dekad w 8 z 10 krajów Europy Wschodniej wzrosła częstość występowania tych zaburzeń. W kilku badaniach szacunki dotyczące częstości występowania opierały się na nielicznych danych. Dotychczas nie opublikowano żadnych badań na temat częstości występowania jadłowstrętu psychicznego i bulimii psychicznej w Białorusi oraz Bułgarii. Badania ograniczyły się do badań kwestionariuszowych. Częstość występowania jadłowstrętu psychicznego i bulimii psychicznej w krajach Europy Wschodniej zbadano za pomocą różnych miar i w wielu przypadkach wykorzystano niereprezentatywne i stosunkowo małe próby. Pomimo tych ograniczeń istniejące dane wykazały, że w tych krajach zarówno jadłowstręt psychiczny, jak i bulimia psychiczna występują. Aby realistycznie opisać skalę problemu jadłowstrętu psychicznego i bulimii psychicznej w Europie Wschodniej, potrzebne są badania epidemiologiczne oraz porównywalne szacunki dotyczące częstości ich występowania.

**Słowa kluczowe:** jadłowstręt psychiczny, bulimia psychiczna, Europa Wschodnia, rozpowszechnienie

### Abstract

The prevalence of eating disorders can vary widely across population groups. It is necessary to estimate the prevalence of anorexia nervosa and bulimia nervosa worldwide, especially outside the Western Europe countries, America, and Australia, where most epidemiological studies have been conducted. Thus, the objective of the present review was to investigate the prevalence of anorexia nervosa and bulimia nervosa in Eastern European countries. Based on the WorldAtlas, we included a total of 10 countries, including Belarus, Bulgaria, Czechia, Hungary, Poland, Moldova, Romania, Russia, Slovakia, and Ukraine, in our assessment. The literature search was performed across the PubMed and PsycInfo databases. Additionally, the results obtained from Google Scholar searches were supplemented. The review was based on publications (papers and/or abstracts) solely in the English language. Before the 1989 democratic transformation, the two eating disorders in question were not studied in Eastern Europe. The review found that the prevalence of anorexia nervosa and bulimia nervosa has risen in eight out of 10 Eastern European countries over the three past decades. In several studies, the prevalence estimates were based on sparse data. To date, no studies have been published on the prevalence of the two eating disorders in Belarus and Bulgaria. The studies were limited to prevalence surveys only. Furthermore, the prevalence of anorexia nervosa and bulimia nervosa in Eastern European countries has been investigated using different measures and, in many cases, non-representative and relatively small population samples. Despite these limitations, the existing data demonstrate that anorexia and bulimia are prevalent in these countries. Future epidemiological studies, and comparable prevalence estimates, are needed for the realistic assessment of the scale of the problem of anorexia nervosa and bulimia nervosa across Eastern Europe.

**Keywords:** anorexia nervosa, bulimia nervosa, Eastern Europe, prevalence

## INTRODUCTION

Eating disorders (EDs) are mental disorders associated with psychological, physical, and social impairment (Treasure et al., 2020). All EDs, and especially anorexia nervosa, have the highest cause-specific mortality rate among all psychiatric diseases (van Hoeken and Hoek, 2020), having resulted in 318.3 deaths worldwide in 2019 (GBD 2019 Mental Disorders Collaborators, 2022).

Globally, in 2019, a total of 55.5 million individuals (717.3 per 100,000 population) were estimated to have an eating disorder, including anorexia nervosa, bulimia nervosa, binge eating disorder, and other specified feeding or eating disorders (Santomauro et al., 2021). Estimates of the prevalence and burden of eating disorders vary by country, sample demographic characteristics, and diagnostic approaches, and depend on the methodology of the epidemiologic study (Galmiche et al., 2019; Santomauro et al., 2021). A prior systematic literature review of the prevalence of eating disorders (Galmiche et al., 2019) demonstrated that the weighted means of lifetime prevalence of accurate eating disorders were 8.4% for women and 2.2% for men. The findings also revealed that the prevalence of eating disorders could vary widely across population groups. The weighted means of point prevalence of accurate eating disorder by continent were 2.2% in Europe, 3.5% in Asia, and 4.6% in America (Galmiche et al., 2019).

Nowadays, anorexia nervosa and bulimia nervosa are recognised to be global phenomena. However, it is worth pointing out that most epidemiological studies on anorexia nervosa and bulimia nervosa have been conducted in Western Europe, America, and Australia. Consequently, the estimates of anorexia nervosa and bulimia nervosa outside the Western countries are needed to better understand the epidemiology of anorexia nervosa and bulimia nervosa, and to guide the health policy and development-of-care (all services at all levels need to be prepared to identify and offer care to individuals with anorexia nervosa and bulimia nervosa) (Hay et al., 2023). Prevalence data allow to assess how common a disease process is in a specified at-risk population at a specific time point or during a specified time period (Tenny and Hoffman, 2023). Prevalence estimates of anorexia nervosa and bulimia nervosa are of great importance for health-related decision-making (Migliavaca et al., 2020b). The number of systematic reviews of prevalence data has increased steadily over the last decade, with a more than ten-fold increase in the number of reviews published from 2007 to 2017 (Migliavaca et al., 2020a). While past epidemiological studies on anorexia nervosa and bulimia nervosa mainly focused on young females from Western countries, the two eating disorders are reported worldwide and both among women and men (van Eeden et al., 2021). Thus, the objective of this narrative review was to investigate the prevalence of the two major eating disorders – anorexia nervosa and bulimia nervosa – across Eastern European countries. The following research question was formulated: what are

the population-based estimates of anorexia nervosa and bulimia nervosa in Eastern European countries?

According to the WorldAtlas, Eastern Europe is composed of 10 countries: Belarus, Bulgaria, Czechia and Slovakia (former Czechoslovakia), Hungary, Poland, Moldova, Romania, Russia, and Ukraine. They were all once part of the communist eastern bloc of countries dominated by the Soviet Union, approximately from 1945 to 1990. From the historical point of view, before the 1989 democratic transformation, anorexia nervosa and bulimia nervosa were not studied either in the Soviet satellite states (Bulgaria, Czechoslovakia, Hungary, Poland and Rumania) nor in the Soviet republics (Belarus, Moldova, Ukraine and Russia) due to the minimal extent of the phenomena (Rathner et al., 1995).

## METHODS

This review is based on a literature search in two electronic databases: PubMed and PsycInfo. The following combinations of search terms were used: ('eating disorder' OR 'anorexia' OR 'bulimia') AND ('prevalence' OR 'Eastern Europe' OR 'Eastern European country' OR 'Belarus' OR 'Bulgaria or Czechia' OR 'Czechoslovakia' OR 'Hungary' OR 'Poland' OR 'Moldova' OR 'Romania' OR 'Russia' OR 'Slovakia' OR 'Ukraine'). Additionally, the results obtained from Google Scholar searches were reviewed. The search was conducted during three months (from April to June 2022). Only publications (papers and/or abstracts) written in English were considered.

### PREVALENCE OF EATING DISORDERS IN THE PAST-SOVIET SATELLITE STATES: PAST AND PRESENT

#### Bulgaria

To date, no epidemiological studies have been published on the prevalence of anorexia nervosa or bulimia nervosa in the Bulgarian population. However, according to the Bulgaria – EU Parliament Study Report, national data has demonstrated that over 250,000 female adolescents and women suffer from the two eating disorders. There is no national programme for the prevention, treatment and rehabilitation of anorexia nervosa and bulimia nervosa. Also, there are no specific therapies for anorexia nervosa and bulimia nervosa, and patients are usually treated in psychiatric hospitals (in wards for patients with addiction problems) or in other hospital wards, depending on the complications.

#### Czechoslovakia (current Czechia and Slovakia)

The results of an epidemiological study focused on the prevalence of two major types of EDs based on the Diagnostic and Statistical Manual of Mental Disorders – DSM-IV

criteria among Czech adolescents ( $N = 981$ ) pointed that the prevalence of anorexia nervosa and bulimia nervosa was 0.14% and 5.7%, respectively, among women, while no men met the diagnostic criteria for the two eating disorders (Krch and Drábková, 1996). In a recent study (Larsen et al., 2020), conducted among 4,430 Czech adolescents aged 12–17 years, the 3-month prevalence of the clinical level of bulimia symptoms was found to be 11.4% in female and 3.8% in male adolescents.

### Hungary

The first epidemiological study of EDs was conducted among 538 medical students (54% females) in 1988–1989 (Túry et al., 1990 – cited by: Túry et al., 2020). The prevalence of anorexia nervosa (Eating Attitude Test, EAT score  $>29$ ) was found to be 3.6% among women and 1.5% among men. In turn, the prevalence of bulimia nervosa according to the DSM-III-R criteria was 1.3% among women and 0.8% among men (Túry et al., 1990 – cited by: Túry et al., 2020). Another study conducted before the political changes in 1989 reported that the prevalence rates of subclinical anorexia nervosa, bulimia nervosa, and subclinical bulimia nervosa in women were 0.3%, 1%, and 3.8%, respectively (Rathner et al., 1995). No clinical cases of anorexia nervosa were found in the female or male medical students studied. In men, the prevalence of subclinical anorexia nervosa and subclinical bulimia nervosa was 0.4% and 0.3%, respectively. In addition, no clinical cases of bulimia nervosa were found in the male medical students (Rathner et al., 1995). In another epidemiological study, no clinical cases of anorexia nervosa were found in the female sample. However, the prevalence of subclinical anorexia nervosa, bulimia nervosa, and subclinical bulimia nervosa in this group was 0.4%, 1%, 1.3%, and 0.8%, respectively. Anorexia nervosa and subclinical anorexia nervosa were not found in the male sample, while the prevalence of bulimia nervosa and subclinical bulimia nervosa in this group was 0.2% and 0.3%, respectively [Krizbai (Kovács), 2010]. An epidemiological study of EDs conducted among secondary school adolescents ( $N = 1,312$ ) demonstrated no clinical cases of anorexia nervosa in the female sample (Kovács, 2007). The prevalence rates of subclinical anorexia nervosa, bulimia nervosa, and subclinical bulimia nervosa were 0.4%, 1%, 0.8% in the female adolescents, respectively. Among the male adolescents, no cases of clinical or subclinical anorexia nervosa were found. Nevertheless, in men, the prevalence of bulimia nervosa and subclinical bulimia nervosa was 0.2% and 0.3%, respectively (Kovács, 2007). In the first representative study performed among young women aged 15–24 years ( $N = 3,615$ ), a point prevalence of anorexia nervosa, bulimia nervosa, subclinical anorexia nervosa, and subclinical bulimia nervosa was estimated at 0.03%, 0.4%, 1.1%, and 1.5%, respectively (Szumska et al., 2005). Additionally, the results showed that students were six times as likely as non-students to meet the criteria of subclinical anorexia nervosa.

### Poland

After the 1989 democratic transformation, anorexia nervosa and bulimia nervosa became one of the most common mental disorders faced by female adolescents in Poland (Pilecki et al., 2009). The first Polish study investigating these disorders was published in the late 1990s. This longitudinal two-stage screening study (Włodarczyk-Bisaga and Dolan, 1996), conducted among 747 secondary school-aged girls aged between 14 and 16 years, found no individuals who met the diagnostic criteria for anorexia nervosa and bulimia nervosa according to the DSM-III-R criteria, however 2.34% of the schoolgirls presented a subclinical eating disorder. Ten months after the initial follow-up, the proportion of subclinical cases remained unchanged. Even though most research had been focused on the female population, an 8-year population-based observational study on the prevalence of anorexia nervosa and bulimia nervosa among men was also conducted in Poland (Jaworski et al., 2019). The study, spanning a period of eight years, demonstrated that the number of men who sought treatment through the National Health Fund was relatively stable (with anorexia nervosa found in 78 men in 2010 and 97 men in 2017; and bulimia nervosa in 28 men in 2010 and 33 men in 2017). Importantly, though, the reports of the prevalence of anorexia nervosa and bulimia nervosa in Poland (and other countries as well) are likely underestimates. It appears that the prevalence is increasing, as more men are either seeking help or are being identified in treatment (Strother et al., 2012). It is worth noting that the way in which anorexia nervosa and bulimia nervosa are assessed and treated is largely reflective of the female-oriented diagnostic framework (Gorrell and Murray, 2019). Until more interest and attention is focused on male eating disorder issues, men will continue to be underdiagnosed (Strother et al., 2012).

### Romania

Psychology as an independent scientific academic discipline and as a scientific field was forbidden in Romania between 1977 and 1990 (David and Stefen, 2017). Data registered before the political changes in 1989, including a nationwide sample of 15,300 children and adolescents aged up to 16 years using the DSM-III criteria, showed that the prevalence of anorexia nervosa was 0.01% among female adolescents and 0.001% among males (Joja, 2001). After the political transformation, the prevalence of subclinical anorexia nervosa was estimated at 2.5% (Túry et al., 1998 – cited by: Joja et al., 2015). Another epidemiological study revealed that the prevalence of anorexia nervosa, subclinical anorexia nervosa, bulimia nervosa, and subclinical bulimia nervosa in the female sample was 0.6%, 1.9%, 1.3%, and 0.7%, respectively. Cases of anorexia nervosa, subclinical anorexia nervosa, and bulimia nervosa were not found in the male sample, while the prevalence of subclinical bulimia nervosa was 0.5% in this group [Krizbai (Kovács), 2010].

An epidemiological study of EDs conducted among secondary school adolescents ( $N = 1,094$ ) reported that the prevalence of anorexia nervosa was 0.6% in the female sample (Kovács, 2007). The prevalence rates of subclinical anorexia nervosa, bulimia nervosa, and subclinical bulimia nervosa were 1.9%, 1.3%, and 0.0% in female adolescents, respectively. In male adolescents, no cases of clinical and subclinical anorexia nervosa or bulimia nervosa were found. Nevertheless, in men, the prevalence of subclinical bulimia nervosa was found to be 0.5% (Kovács, 2007). Another study revealed that the prevalence of eating disorders based on the SCOFF questionnaire was 24.2% in Romanian ( $N = 596$ ) healthcare university students (Tavolacci et al., 2018).

### PREVALENCE OF EATING DISORDERS IN THE PAST SOVIET REPUBLICS: PAST AND PRESENT

#### Belarus

To the our best knowledge, there has been no research on anorexia nervosa and bulimia nervosa or the prevalence of these two disorders in the Belarusian population.

#### Moldova

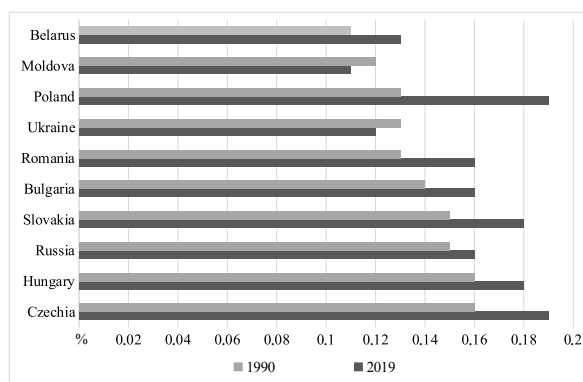
Just one study has been identified, reporting that the prevalence of EDs based on the SCOFF questionnaire was 35.6% among healthcare university students in Moldova (Tavolacci et al., 2018).

#### Ukraine

Two cross-cultural studies focused on the prevalence of EDs in Ukrainian university students have been identified. One of the studies demonstrated that 26.4% of individuals reported EDs. More precisely, the prevalence of EDs based on the SCOFF questionnaire among university students in Ukraine ( $N = 723$ ), Poland ( $N = 708$ ), and Hungary ( $N = 534$ ) was 36.9%, 19.7%, and 21.0%, respectively (Kiss-Tóth et al., 2018). EDs were linked to being female and younger, having a higher level of body mass index, living alone, and being susceptible to stress and anxiety. In the other study, it was reported that EDs affected 26.3% of students. The prevalence of eating disorders based on the SCOFF questionnaire was 36.9%, 21.8%, and 20.2% among Ukrainian, Polish, and Hungarian students, respectively. Additionally, EDs were positively associated with the female sex, body mass index, living without a partner, and psychological distress, and negatively associated with access to healthcare (Lukács et al., 2020).

#### Russia

To date, two studies have been published on the prevalence of bulimia nervosa in Russian adolescents. A higher



Note: Based on the Institute for Health Metrics and Evaluation (IHME), Global Burden of Disease Collaborative Network (2020).

Fig. 1. Prevalence of anorexia nervosa and bulimia nervosa in Eastern European countries in 1990 and 2019: findings from the Global Burden of Disease Study 2019

3-month prevalence of bulimia nervosa assessed by the Eating Disorder Diagnostic Scale was observed in girls compared with boys in the 13–17-year-old age range (3.9% vs. 1.2%) (Koposov et al., 2022, 2023). In addition, the proposition of a lower gender ratio in bulimia nervosa (close to 1:4) was indicated (Koposov et al., 2023). Boys with bulimia nervosa experienced higher levels of psychiatric comorbidity than girls. Bulimia nervosa was linked to somatic complaints, somatic anxiety, functional impairment, symptoms of anxiety and depression as well as binge drinking (Koposov et al., 2022).

### PREVALENCE OF EATING DISORDERS IN EASTERN EUROPEAN COUNTRIES: PAST THREE DECADES

The prevalence of anorexia nervosa and bulimia nervosa in 1990 ranged from 0.11% (Belarus) to 0.16% (Czechia and Hungary), whereas in 2019 it varied between 0.11% (Moldova) and 0.19% (Czechia and Poland) (Fig. 1) (Global Burden of Disease Collaborative Network, 2020). The data was based on representative surveys, medical data, and statistical modelling (Global Burden of Disease Collaborative Network, 2020).

### DISCUSSION

The objective of the current contribution was to provide a narrative summary of the literature published to date on the topic of the prevalence of two major types of EDs in Eastern European countries. Before the 1989 democratic transformation in the region, anorexia nervosa and bulimia nervosa were not studied in Eastern European countries. From the review, it follows that the prevalence of anorexia nervosa and bulimia nervosa has risen in eight out of 10 Eastern European countries (Belarus, Bulgaria, Czechia, Hungary, Poland, Romania, Russia, Slovakia) over the three past decades (Global Burden of Disease Collaborative Network,

2020). In 2019, the prevalence of the two major types of EDs in Poland was higher when compared to the prevalence reported for other Eastern European countries, but similar to Czechia (0.19%). Results from the Global Burden of Disease Study 2017 indicated that the prevalence of EDs increased continuously in the period 1997–2017 in all regions globally (Wu et al., 2020). The results of previous systematic reviews and meta-analyses revealed that the lifetime prevalence rates of anorexia nervosa in Western countries ranged from 0.1% to 3.6% in females, and 0% to 0.3% in males (van Eeden et al., 2021), while the lifetime prevalence rates of bulimia nervosa in Western countries varied from 0.3% to 4.6% in females, and from 0.1% to 1.3% in males (Galmiche et al., 2019). More specifically, anorexia nervosa is estimated to affect less than 1% to 4% and bulimia nervosa less than 1 to 2% of women across Europe. Regarding European men, 0.3–0.7% report threshold and subthreshold eating disorders, respectively (Keski-Rahkonen and Mustelin, 2016). It is worth pointing out that an increase in the prevalence of anorexia nervosa and bulimia nervosa may be attributed to the changes in diagnoses from the previous edition of the DSM to DSM-5 criteria. Taking into account criticisms regarding the expansiveness of the DSM-IV and the epidemiological estimates based on the DSM criteria (Mechanic, 2003), efforts have been made to revise the prevalence estimates to make them more credible. One previous study (Vo et al., 2017) revealed that applying the DSM-5 criteria led to an increase in anorexia nervosa and bulimia nervosa diagnoses (prevalence of anorexia nervosa and bulimia nervosa rose by less than 5% in this clinical sample of female and male adolescents).

The present review found that in several studies (e.g. Tavo-lacci et al., 2018) the prevalence estimates were based on sparse data. To date, no studies have been published on the prevalence of anorexia nervosa and bulimia nervosa in Belarus and Bulgaria. Despite these limitations, there is no doubt that the studies conducted in Eastern European countries show that anorexia nervosa and bulimia nervosa have been a common phenomenon, indicating that these EDs are no longer confined to any particular culture or society (Nasser, 2005).

The past seems to have an impact on the view of mental illness that is prevalent across Eastern European countries. The stigmatisation of patients with mental illness remains prominent, and suspicion towards psychiatric institutions remains a legacy of the Soviet healthcare system in several countries of Eastern Europe (Hook and Bogdanov, 2021; McDaid and Thornicroft, 2005). Therefore, a greater focus on mental health-related stigma and mental health knowledge remains important and is deeply needed. In future research, the use of the same classification system (DSM-5 or International Classification of Diseases 11<sup>th</sup> Revision – ICD-11) as well as research methods (e.g. screening and evidence-based tools, standard instruments for assessing eating disorder symptoms and related features) should be considered, as it would facilitate the integration

of information from various studies (both national and international).

The present review was limited by the “English-language bias” or the “Tower of Babel bias” (i.e. exclusion of non-English studies) (Grégoire et al., 1995), which may reduce generalisability (Jackson and Kuriyama, 2019). Furthermore, the existing studies are limited to anorexia nervosa and bulimia nervosa, and the exclusion of other EDs from surveys is problematic when drawing conclusions as to prevalence. The epidemiological data from Eastern European countries is limited to prevalence surveys, and report considerable diversity. The prevalence of anorexia nervosa and bulimia nervosa in Eastern European countries was estimated using different measures (e.g. SCOFF questionnaires, Eating Disorder Inventory, Eating Attitudes Test), and in many cases non-representative and relatively small samples were studied. All these limitations may result in an underestimation of the prevalence rates of anorexia nervosa and bulimia nervosa. Despite these limitations, however, we believe that this narrative review represents a reliable source of knowledge about the prevalence of anorexia nervosa and bulimia nervosa in Eastern European countries, and contributes to ongoing discussions in the field of epidemiology within this area of research.

## CONCLUSION

Anorexia nervosa and bulimia nervosa are among global health concerns. The existing data demonstrate that anorexia nervosa and bulimia nervosa are prevalent in Eastern European countries. Therefore, future epidemiological studies, and comparable prevalence estimates, are needed for the realistic assessment of the scale of the problem posed by anorexia nervosa and bulimia nervosa in Eastern Europe.

### Conflict of interest

*The authors do not report any financial or personal connections with other persons or organisations which might negatively affect the contents of this publication and/or claim authorship rights to this publication.*

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### Author contributions

*Original concept of study; collection, recording and/or compilation of data; analysis and interpretation of data; writing of manuscript; critical review of manuscript; final approval of manuscript: ABM.*

## Piśmiennictwo

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