

Prevalence and risk factors of depressive episodes among student population in Wrocław – epidemiological study results

Marta Zagdańska, Andrzej Kiejna¹

Department of Psychiatry, Wrocław Medical University

Summary

Aim. The aim of this study was to identify risk factors and estimate prevalence of depressive episodes among Wrocław's universities students.

Method. Polish adaptation of the Composite International Diagnostic Interview (CIDI) was implemented to gather epidemiological data from 370 students of public universities in Wrocław. Proportional stratified sampling was performed to obtain distinct, independent strata representing sex, year of study and educational profiles. Randomization was ensured by recruitment procedures.

Results. Prevalence of depressive episodes among students in Wrocław is high – 14.7% throughout life, 9.8% within 12 months prior to the interview. High prevalence of severe and moderate depressive episodes seems to be worrisome (respectively 5.1% and 6.6% throughout life, 3.8% and 3.9% within 12 months prior to the study). Year of study, profile and lack of partner relationship remain risk factor for depression.

Conclusions. High prevalence of depressive episodes indicates the need for prevention and therapy based on epidemiological data and tailored to the students' needs. Depression among students requires further epidemiological studies.

Key words: depressive episodes, student population, psychiatric epidemiology

Introduction

Majority of university students remains young adults. According to 2010/2011 academic school year statistic data only 9% of university students in Poland were

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above 30 years old [1]. Relationship between studying and mental health (including the depressive disorders) is multidimensional. Becoming a student delay mature responsibilities, and for that reason can be considered as protective factor. However this stage of life is often emotionally and intellectually challenging, which leads to increased level of stress [2]. Moreover university education usually overlaps with separation and individuation from family of origin. This process itself increases the risk of emotional crisis [3]. According to empirical studies, mood disorders often dates back to childhood, adolescence and early adulthood [4–6]. Those problems often influence students affecting the course of their education and further professional career [7, 8]. Nonetheless, so far only few modern epidemiological researches address the prevalence of depressive episodes among university students. Above mentioned projects were accomplished in France and US [7, 9].

Existing knowledge regarding prevalence, severity and course of depressive episodes among Polish university students is both superficial and incomplete [10]. Furthermore, methodology of the previous researches conducted in Poland does not match the modern paradigm of epidemiological studies completed abroad. Polish authors focus exclusively on chosen depressive symptoms, but do not estimate the prevalence of disorders diagnosed according to the current international diagnostic criteria [10–15]. Sampling design and questionnaire construction remain serious limitation of existing Polish studies. All of them are based on convenience sampling method (meaning gathering data from group of students present at the given lecture) and self-developed measurement tools (including only selected symptoms and preclude further comparative analysis). Absence of reliable data from population studies is a serious obstacle blocking organization of prevention and therapeutic programs that are effective and tailored to different target groups' needs (including university students) [16, 17].

Depressive episodes among university students population

US play the leading role in measuring prevalence of the psychiatric disorders among university students. American research centers implement advanced studies gathering data from large, randomly selected samples, with the usage of standardized questionnaires based on current diagnostic criteria. Those studies indicate significant prevalence and severity of depressive episodes among university students [8]. American authors estimate that 17% of academic youth suffer from depressive symptoms [7], from 5% up to 9% meet diagnostic criteria for major depression [18, 19]. Epidemiological trends presented by French authors are also alarming. Up to 8.9% of French university students suffered from major depressive episode within the year prior to the interview based on Composite International Diagnostic Interview (CIDI) [9].

Depressive symptoms among Polish university students

Clinicians indicate that large group of Polish students experience severe symptoms of depression [20]. Research data not only confirm this tendency, but also indicate that frequency of sadness, apathy and discouragement among academic youth increases steadily [21]. Prevalence of depressive symptoms varies from 13.25% to 33.3% depending on sex, university profile, year of studies and research methodology. Up to 5% of respondents suffer from severe depression symptoms, 2.2% seriously consider committing suicide [13, 15]. Depressive mood is more frequent among freshmen who recently started university education [10, 12]. According to existing literature, relationship between depressive symptoms distribution and education profile (including university type) is not clear. Research findings regarding sex as a depressed mood risk factors are also inconsistent [10, 11, 14].

Material

Current research included full-time students of public universities in Wrocław, Poland. Epidemiological data was gathered from academic youth studying at University of Wrocław, Wrocław University of Technology, Wrocław University of Economics, Wrocław University of Environmental and Life Sciences, Wrocław Medical University, Wrocław University of Physical Education, Karol Lipinski Academy of Music in Wrocław, Eugeniusz Geppert Academy of Fine Arts. Sample design was based on the sampling frame structure regarding sex, year, mode and profile of studies. Randomization was guaranteed by recruitment and fieldwork procedures. Data collection was accomplished with the usage of computer-assisted personal interviews (CAPI). Detailed description of the research methodology can be found in doctoral dissertation by Zagdańska [22]. Research sample included 370 students, among who 57 met, at some point of life, diagnostic criteria for depressive episodes according to ICD-10.

Method

Presented findings are based on Polish adaptation of the Composite International Diagnostic Interview (CIDI). Composite International Diagnostic Interview is a diagnostic tool recommended by World Health Organization for epidemiological research in psychiatry [23]. It allows to generate diagnoses consistent with current disorders classification systems (ICD-10, DSM-IV) based on standardized diagnostic interview conducted by trained interviewers [24]. Presented analyses were limited to mild, moderate and major depressive episodes.

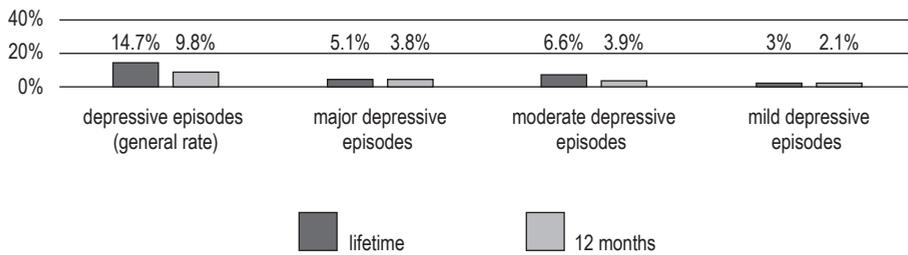


Figure 1. Prevalence of depressive episodes among university students in Wrocław

Results

Prevalence of depressive episodes

Lifetime prevalence of depressive episodes is estimated at the level 14.7%. Similar rate calculated for 12 months period does not exceed 10% (9.8%). University students from Wrocław most often meet diagnostic criteria for moderate depressive episode – 6.6% life time and 3.9% within the 12 months prior to the interview. Major depressive episodes are only slightly less frequent (respectively 5.1% and 3.8%). Mild depressive episodes are significantly less prevalent (respectively 3% and 2.1%), (see Figure 1).

Risk factors of depressive episodes

Current research revealed that year of studies, education profile and partner relationship status remain important risk factors of depressive episode. Academic youth at the middle stage of education (meaning second or third year students) more often suffer from depressive symptoms – 18.1% lifetime and 14.4% within 12 months prior to the measurement) comparing to their younger (respectively 14.1% and 7.8%) and older colleagues (8.6% and 3.7%) (see Table 1). Observed tendencies are statistically significant only in case of the 12 month prevalence rate ($\chi^2 = 7.765$, $p = 0.024$, $DS = 2$).

Depressive episodes are more prevalent lifetime among those who study humanities and pedagogic (30.3%), social science (25%) and environmental sciences, agriculture, forestry and fisheries (21.9%). Lifetime prevalence of depression among students representing other profiles is significantly lower and vary from 6.2% (in case of medical studies) to 10.6% (engineering, architecture and IT), ($\chi^2 = 22.825$, $p = 0.001$, $DS = 6$). Distribution of the 12 months prevalence is pretty similar, but observed rates are slightly lower. Due to the insufficient number of cases, χ^2 test could not be used for calculating statistical significance of observed correlations in case of shorter reference period.

Absence of stable partner relationship was confirmed as an important risk factor for depressive episodes, both lifetime ($\chi^2 = 5.767$, $p = 0.011$, $DS = 1$) and 12 months prior to the CIDI interview ($\chi^2 = 7.843$, $p = 0.005$, $DS = 1$). Single students suffer from

depressed mood more frequently than their peers engaged in romantic relationship (19.6% vs. 10.5% lifetime and 14.1% vs. 5.3% within recent year).

Risk factors of major depressive episodes

Absolute number of major depressive episode cases in the current research was insufficient to conduct statistical testing with χ^2 test for following risk factors: education profile (both lifetime and 12 months), accommodation and year of studies (12 months only). Analysis reveals that both year of studies and romantic relationship correlate with lifetime prevalence of major depressive episodes. Students who are at the middle of their studies are significantly more prone to severe depression (8.1%) than freshmen (4.7%) and those who are about to graduate (0%) ($\chi^2 = 7.812$, $p = 0.027$, $DS = 2$). Academic youth who remains single experience severe depressive episodes more often comparing to their colleagues involved in stable relationship with partner (7.5% vs. 2.3% lifetime and 5.5% vs. 1.8% within 12 months prior to the research) (see Table 1). Abovementioned trend is statistically significant only in case of lifetime prevalence rate ($\chi^2 = 5.240$, $p = 0.021$, $DS = 1$).

Risk factors of moderate depressive episodes

Due to low absolute number of cases of moderate depressive episodes, χ^2 test analyses were limited to following factors: sex, year of studies (lifetime prevalence only), accommodation (lifetime prevalence only) and stable relationship with a partner. Statistical testing confirmed only correlation between romantic relationship and frequency of moderate depression. Single students significantly more often suffer from moderately depressed mood episodes, both lifetime (9.5% vs. 3.5%, $\chi^2 = 5.546$, $p = 0.024$, $DS = 1$) and within 12 months prior to the CIDI interview (6% vs. 1.8%, $\chi^2 = 3.487$, $p = 0.037$, $DS = 1$) (see Table 1).

Risk factors of mild depressive episodes

Mild depressive episodes are the least likely observed mood disorder among students in Wrocław. Relatively low prevalence rates prevented χ^2 test analyses for 12 months reference period. Statistical inference conducted for lifetime prevalence reveals only one significant risk factor – accommodation. It has been indicated that there is a relationship between the frequency of mild depression and the accommodation of students ($\chi^2 = 9.765$, $p = 0.022$, $DS = 3$). Current research confirms that students who described their accommodation status as “other” are more prone to mild depressive episode (11.1% in the group defining their accommodation as “other” vs. 3.8% of those who live together with their parents vs. 2% of those at the students’ rentals vs. 0.9% of those who live in dormitory) (see Table 1).

Table 1. Depressive disorders risk factors among students population in Wrocław

Risk factor	Description	Depressive episode (general rate)		Major depressive episode		Moderate depressive episode		Mild depressive episode	
		LT*	12M*	LT*	12M*	LT*	12M*	LT*	12M
Sex	Female	15.9%	11.7%	5.6%	4%	6.2%	4.1%	4.1%	3.6%
	Male	13.7%	9.8%	4.6%	3.6%	7.4%	5.1%	1.7%	0.6%
Year of studies	1 st year	14.1%	7.8%	4.7%	3.9%	7.8%	3.1%	1.6%	0.8%
	2 nd and 3 rd year	18.1%	14.4%	8.1%	5.6%	6.2%	5%	3.8%	3.8%
	4 th and 5 th year	8.6%	3.7%	0%	0%	4.9%	2.5%	3.7%	1.2%
Education profile	Engineering, architecture, IT	10.6%	8.3%	5.3%	5.3%	3.8%	3%	1.5%	0%
	Environmental science, agriculture, forestry, fisheries	21.9%	14%	7.8%	6.2%	12.5%	6.2%	1.6%	1.6%
	Business, management, law	7.2%	7.2%	0%	0%	1.8%	1.8%	5.4%	5.4%
	Social science	25%	18.7%	12.5%	12.5%	12.5%	6.2%	0%	0%
	Humanities and pedagogic science	30.3%	18.2%	4.1%	2%	18%	10.2%	8.2%	6%
	Medical science	6.2%	3.1%	3.1%	0%	0%	0%	3.1%	3.1%
	Other	9.5%	4.8%	9.5%	4.8%	0%	0%	0%	0%
Accommodation	Students' rental	14%	8.7%	4%	2.7%	8%	4%	2%	2%
	Dormitory	10.5%	6.2%	4.4%	2.7%	5.2%	3.5%	0.9%	0%
	With parents	20.5%	12.9%	10.3%	9%	6.4%	2.6%	3.8%	1.3%
	Other	18.5%	14.8%	0%	0%	7.4%	3.7%	11.1%	11.1%
Stable relationship	Stable relationship with partner	9.3%	5.3%	2.3%	1.8%	3.5%	1.8%	3.5%	1.7%
	Single	19.5%	14%	7.5%	5.5%	9.5%	6%	2.5%	2.5%

LT – lifetime; 12M – within 12 months

Discussion

Current research confirms substantial prevalence of the depressive episodes lifetime (14.7%) and within the 12 months prior to the measurement (9.8%). High prevalence of major and moderate depressive episodes remains especially alarming – respectively 5.1% and 6.6% lifetime, 3.8% and 3.9% within the recent year. Observed rates are similar or even higher comparing to results of existing studies. The greatest discrepancy is noticed when we compare current data with Polish researches based on Beck Depression Inventory. Substantial methodological differences (including sample and

measurement tools designs) are probable explanation for this findings inconsistency. This hypothesis is also supported by the fact that current estimation of major depressive episodes prevalence is nearly identical to rates indicated by the foreign epidemiological studies (it remains close to 5%).

Modern epidemiological studies have shown that females are at greater risk of depressive disorders [17]. This tendency was confirmed for different age groups, including teenagers and young adults. Existing Polish researches regarding population of students are not consistent with abovementioned international findings. Most of the Polish studies indicate that males are more prone for depression. Presented research findings are not fully conclusive regarding the correlation between sex and vulnerability to depressed mood. Disproportion between depressive episodes prevalence ratio observed among females is only slightly higher and remains exactly 2.7%. This trend might be an outcome of social changes observed lately both in Poland and other western countries. Those changes include increase of the female role in public life and business setting and greater acceptance of male emotionality and weaknesses. It might lead to alignment of depression prevalence rates among both sexes. Abovementioned processes can be especially intense among university students who own above-average intellectual resources, access to knowledge and modern lifestyle and ability of insightful analyzing the surrounding world. Current research findings and interpretation of the existing data suggest that prevention and therapy of affective disorders should be directed both to female and male university students.

Year of studies remains a clear risk factor of depressive episodes. The highest prevalence of those diagnoses was observed among students at the middle stage of university education (especially in case of lifetime prevalence). Presented data is consistent with findings from research regarding mental health of students from Medical University of Lodz [12]. Discrepancies in prevalence of depression reported for different stages of university education are significantly larger in case of 12 months rates. It might suggest contextual (related to given stage of education) etiology of discussed mood disorders. Disappointment with the scope, course and quality of studies together with concerns regarding adequacy of chosen career profile can be considered as potential explanation of the greater susceptibility to depressive episodes. The latest literature more often indicates that Polish students are unsatisfied with the organization and quality of university education, inadequacy of current learning programs and methods and objectification of students by academic teachers [25]. Abovementioned elements overlap with typical age-related concerns regarding future professional career [26] and educational failures. Initial period of studies is usually associated with adjusting to academic life and fears related to this process [27]. For this reason, in-depth thoughts regarding both subject and organization of studies might occur with a delay, as a consequence of confrontation between ones abilities and talents, and opportunities given by university education system in Po-

land. Pessimistic reflections, doubts regarding future success, decrease of interest in academic lectures seem to be more probable at the middle stage of studies. Relation between abovementioned problems and depressive episodes among second and third year students requires further investigation.

Presented research indicates that some education profiles, including humanities, social sciences, environmental sciences, agriculture, forestry and fisheries, are more prone to depression. Provided data does not allow a conclusion regarding causes and consequences of observed tendencies. Absence of existing knowledge limits the adequate interpretation of presented correlations. Discussed observation requires more in-depth exploration during longitudinal research. Similar difficulties occur when we try to comment statistically significantly higher prevalence of mild depression among students describing their accommodation as "other". Not only we do not have literature hints for interpretation, but also we cannot precisely define abovementioned answer category. This category includes both the respondents who live with extended family, and those using the accommodation belonging to friends and acquaintances.

Existing researches regarding psychiatric epidemiology identify stable relationship with partner as an important protective factor of emotional crises, including mood disorders [17]. Those publications do not indicate the direction of abovementioned relation (romantic relationship prevents from depression or depressed mood is a cause of difficulties in establishing and maintaining close relationship). Presented research confirms the correlation between romantic relationship and depression. It has also similar methodological limitations. Single university students from Wrocław are at greater risk of depressive episodes (including major and moderate severity of the disorder). Presumably absence of stable relationship and depression reinforce each other (Depression impede finding a partner and build close relationship, lack of beloved person escalates depressed mood symptoms and as a consequence establishing and maintaining relationship becomes even more difficult).

Current research is the first modern epidemiological research regarding mental health of university students in Poland. Presented research employees methodological approach and research tool recommended by World Health Organization for epidemiological studies in psychiatry. Methodological limitations of this research are caused by implementing cross-sectional scheme (it prevents from concluding about cause and effect relationships), relatively small sample size (insufficient for conducting some statistical analyses) and inability to obtain full sampling frame (it influence the representativeness of the sample).

Changing research approach into computer assisted web-based interview (CAWI) could be an effective way of dealing with abovementioned methodological limitations. Conducting online interviews is much less expensive than traditional data collection methods. It enhance accomplishing recruitment phase directly by the university (with the usage of the official university mailing list). As a consequence it enables to conduct

the random sampling procedure and reach much larger number of students eligible for the research. Online research requires measurement tool adjusted to web-based interview needs. Such a questionnaire and software should be developed before any further epidemiological research in student population will be implemented in Poland. This kind of measurement tool will improve the data quality and guarantee better estimation of the depressive episodes prevalence among university youth.

Conclusions

1. Significant prevalence of depressive episodes among university students population arises concerns.
2. Absence of correlation between sex and depressive episodes distribution is inconsistent with the existing research findings and requires further exploration.
3. Students who are in the middle of the university education period are at greater risk of depressive episodes.
4. Education profile is strongly correlated with prevalence of depressive disorders. This observation should be the subject of further investigation in longitudinal studies including larger samples.
5. Absence of stable relationship is an important risk factor of depressive episode – single university students experience affective disorders more frequent comparing to those who have partners.

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Address: Marta Zagdańska
Department of Psychiatry, Wrocław Medical University
50-367 Wrocław, Wybrzeże L. Pasteura Street 10