
GENERAL

EMPLOYMENT IN SCHIZOPHRENIA – STUDENTS’ POINT OF VIEW

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Abstract: Schizophrenia is a serious mental disorder and has a huge economic burden related to direct and indirect costs. Direct costs include such expenditure as hospitalization. Indirect costs, however, result mostly from the loss of productivity. Although patients are frequently interested in job opportunities, unemployment is widespread among them. Thus, we evaluated opinions of medical universities students’ concerning situation on the labor market among those in the remission stage of schizophrenia. The study was carried out between October 2015 and October 2016 in Poland and other European Union countries using a self designed questionnaire. The study tool consisting of five questions was distributed to students by direct contact and via the Internet. Of a 5200 distributed sheets, we received 1036 questionnaires and 942 were finally analyzed. In the students’ opinion, patients are generally interested in finding a job but they are afraid coming back to work. Although unemployment is common among patients with schizophrenia, the number of patients capable of working is significantly higher than the number of those actually employed. According to results of the study, getting a job might be effectively supported by non-pharmacological interventions. Considering the noticeably higher number of patients capable of working compared to those employed, development of employment possibilities should be a priority for mental health care decision makers. It should lead to reduction of the patients’ concerns related to looking for a job. Moreover, comprehensive treatment could reduce the economic burden of schizophrenia.

Keywords: schizophrenia, employment, students, opinions, European Union

Schizophrenia is a serious, chronic and debilitating mental illness, which affects 1% of the global population irrespective of patient’s country of origin, sex or cultural group (1-3). It requires long-lasting and comprehensive treatment. Moreover, schizophrenia is among the most stigmatizing disorders and is characterized by episodes of relapses and remissions. Thus it has critical health, economic and social consequences (1-3) related to everyday living and work.

Although the number of working people with schizophrenia varies between countries, usually ranging from 10% to 20%, unemployment is common among them (2, 4, 5). It is mainly due to the severity of symptoms and the recurrent course of this disorder. It also results from the discrimination

and the lack of employers willing to employ a patient in the remission stage (3, 4, 6).

In spite of the fact that the patients are generally afraid of looking for a job during remission of schizophrenia (2), work is very often a superior goal for them (7). In addition to this, surveys suggest that the majority of patients with a severe mental disorder want to work (8) and experts believe that more than 50% of patients could work during remission stage (2). Moreover, supported employment (SE) performs a therapeutic function (3, 5) and may lead to the competitive work attainment (5). Apart from that, work is associated with a significantly better quality of life for mentally ill people and contributes to “compliance” and to lower rehospitalization rates, likewise (2, 9, 10). Thus, the improvement of the

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patient's situation on the labor market should in the long run bring significant savings both in terms of direct and indirect costs (4, 11, 12).

Considering the economic burden of schizophrenia (11), indirect costs mainly dominated by the value of lost productivity and generated both by the patients and their healthy caregivers constitute approximately 2/3 of total costs of this disorder (11, 13, 14). Furthermore, a huge part of the global financial impact of mental disorders concerns getting and keeping a job (11), hence the importance of studies related to job opportunities among patients with schizophrenia.

Therefore, this paper investigates opinions of medical universities students' concerning situation on the labor market and job opportunities of patients in the remission phase of schizophrenia. Importantly, to our knowledge there have been no previous analyses carried out in a similar way and among students who will soon be experts responsible for effective treatment of mental disorders. Aside from that, results of this study should lead to an update of curricula and educational programs which should be aimed at providing information about comprehensive and cost-effective treatment of mental disorders. It is also aimed at creating academic leadership in developing social awareness about the actual course of schizophrenia and thus may help patients effectively come back to the labor market and to the society likewise.

METHODOLOGY

The study was carried out between October 2015 and October 2016 using a specially designed questionnaire comprising five open-ended questions and a statistical section related to the students' faculty and their current place of residence. Before the study, the questionnaire was evaluated and accepted by 5 psychiatrists and experts in the field of economy of mental health care. What is important, the questionnaire was constructed to be easy and rapid to fill in (the fulfillment lasts approximately 2-3 minutes). In questions 1 to 3 and in question 5, the respondents were asked to choose from the following answers: "agree", "hard to say" and "disagree". The questions were related to patients' situation on the labor market and concerned respectively: the fear of looking for a job, willingness to work, significance of less frequent inpatient stays for better quality of life, and the effect of non-pharmacological therapies on success in getting a job. In question 4, however, study participants were asked to indicate the percentage of patients employed and

patients that might be employed during remission. Potential variants were percentage rates in 10% increments and starting from the range of 0-10%, and ranked from 1 to 10 respectively. Apart from the generally presented probability (statistical significance was based on $p = 0.05$), results in question 4 are also related to the median with interquartile range Me (25-75%).

The anonymous study tool was delivered to students of pharmacy, medicine and public health faculties who had completed at least the third year of their studies. It was to ensure both a better awareness and a better knowledge of the respondents in the field of mental disorders. The inclusion of students of pharmacy might be questionable. However, pharmacists also have direct contact with patients, but their role is sometimes underestimated. Nevertheless, within the pharmaceutical care they are able to inform not only about medicines, but also about the illness and non-pharmacological therapies e.g. related to SE.

Potential respondents were selected by sending the request to fill in the questionnaire to students of scientific organizations and/or our partners from other Universities (e.g. Zentrum für Integrative Psychiatrie of Christian-Albrecht University in Kiel – Germany; Department of Pharmacology Medical University of Plovdiv – Bulgaria). Apart from that, the questionnaire was distributed to students by direct contact and via the Internet. The addressed participants were requested to return them "at once" if possible or by e-mail.

Initially, the study was conducted in Poland and later the questionnaire was sent to potential respondents in other European Union (EU) countries. Of a 5200 of distributed requests, 1036 questionnaires were received and 942 were finally included in the study. 739 were from Poland and 203 were collected in other EU countries. 94 questionnaires were excluded since they were addressed at an inappropriate group of respondents (students of different faculties e.g. physiotherapy) or were filled in incorrectly (e.g. statistical information was not provided). Analysis of data concerning the faculties has shown that no respondent from "other EU" countries represented a Public Health faculty. Many students refused to participate in the study due to their lack of knowledge, lack of interest in the field, and/or unwillingness to participate in such a study. These reasons were indicated both by potential respondents and by partners from befriended Universities where study was carried out.

The questionnaire is available upon request from the corresponding author.

RESULTS

In question one, majority (83.86%) of the participants answered that patients in the remission stage of schizophrenia were afraid of looking for a job. The option “hard to say” was marked by 10.94% of the respondents and “disagree” by 5.20%. Among Polish (PL) and European (EU) respondents, “agree” was the first choice, too, reaching 85.93% and 76.35% respectively. “Hard to say” was marked by 9.20% of PL and 17.25% of EU participants. “Disagree”, however, was indicated by 4.87% of PL and 6.40% of EU respondents. A statistical relationship was observed between answers to question one and study groups (p = 0.003).

In question two, the study participants (p = 0.380) mostly declared (62.42%) that the patients would like to work. Nevertheless, 22.82% opted for the “hard to say” variant and 14.76% for “disagree”. Answers given by PL and EU respondents were as follows: “agree” 62.79% and 61.09%; “hard to say” 23.27% and 21.18%; “disagree” 13.94% and 17.73%, respectively.

In question three, respondents (p = 0.046) agreed that less frequent hospitalizations improve quality of life of both the patients and their healthy caregivers. Answer “agree” was given by 51.44% of study participants, “hard to say” by 30.03%, and “disagree” by 18.53%. Among PL respondents, “agree” was chosen by 51.36%, followed by “hard to say” – 31.52%, and “disagree” – 17.12%. Among

participants from other EU countries, the results were as follows: 51.72% “agree”; 24.63% “hard to say”, and 23.65% “disagree”.

In question four, most study participants (24.25%) indicated that the number of working people suffering from schizophrenia is between 20% and 30%, followed by the range of 10-20% chosen by 21.60% of respondents. The number of mentally ill people whom the students considered capable of working is significantly higher, reaching 20.84% of answers for the range of 70-80%, and 18.26% for the range of 60-70%. In Poland as well as in other EU countries the most popular answer related to the number of working people was the variant of 20-30%, chosen by 24.83% and 22.17% of respondents, respectively. In terms of the capacity to work the 70-80% range was the most popular answer among PL participants (22.53%). In other EU countries, however, it was 60-70% chosen by 18.23% of the respondents.

In question five related to the importance of non-pharmacological therapies for getting a job, “agree” was the most popular (84.82%) answer, followed by “hard to say” 13.16%, and “disagree” chosen by 2.02%. Among PL and EU participants, answers were as follows: “agree” 86.60% and 78.33%; “hard to say” 11.37% and 19.70%; “disagree” 2.03% and 1.97%, respectively. A statistical dependence was observed between answers to question five and the study groups (p = 0.008).

Table 1. Distribution of responses related to the number of patients who „work” and who are „capable of working” within remission of schizophrenia.

	Location	Interquartile range Me (25-75%)	p value	Faculty	Interquartile range Me (25-75%)	p value
Patients who „Work” during remission of schizophrenia	PL 3	(2-4)	0.1054	Pharmacy	3 (2-5)	0.4318
				Medicine	3 (2-4)	
				Public Health	3 (2-4)	
	EU 3	(2-4)	0.0139	Pharmacy	3 (2-5)	0.0139
Medicine	3 (1-4)					
Patients „Capable of working” during remission of schizophrenia	PL	7 (5-8)	0.0491	Pharmacy	6 (5-8)	0.0555
				Medicine	7 (6-8)	
				Public Health	6 (4-8)	
	EU	6 (4-8)	0.3943	Pharmacy	6 (4-8)	0.3943
Medicine	6 (3-8)					

Source: based on our own studies: Me-Median, PL- Poland, EU- other European Union countries
 Percentage rates in 10% increments ranked from 1 to 10 respectively: “1” – 0%-10%, “2” – 10%-20%, “3” – 20%-30%, “4” – 30%-40%, “5” – 40%-50%, “6” – 50%-60%, “7” – 60%-70%, “8” – 70%-80%, “9” – 80%-90%, “10” – 90%-100%

DISCUSSION

Although many people may live normally within remission stage, patients with schizophrenia are perceived as being imponderable, dangerous and affected by an incurable disorder (15). Such stereotyped beliefs in the society might be deepened by the lack of knowledge about mental illnesses (16). In the study conducted by Magliano et al. it was indicated that these feelings concern also students of medicine and psychology, who hold the view that persons with schizophrenia are unpredictable and dangerous (15).

Despite the common stigma and social exclusion of people with schizophrenia (3), those persons frequently want to work and do not want to be discriminated against due to their mental illness (3, 8). This is consistent with the answers obtained from study participants the majority of whom indicated that patients would like to work during remission of schizophrenia. Nevertheless, the rates of employment among people with schizophrenia are low, generally ranging from 10% to 20% (3, 4, 10), but in Poland it is 2% (2). What is important, unemployment rate among patients with schizophrenia might

be related to the results of the survey of potential employers who mostly claimed that they would not employ someone who had been mentally ill (4). It may deepen the patient's marginalization and boost fears of looking for a job during remission of schizophrenia.

In Germany, however, employment rate of patients in the remission stage was estimated slightly above 30% (7) which confirms that a more effective comeback into the society of people affected with schizophrenia is possible. Nonetheless, as it was indicated in the present study, the number of working people is still relatively lower than the number of patients who might be capable of working during remission of schizophrenia. In spite of the fact that there are few research papers about the rate of people who could work in the remission phase, studies carried out both by Srivastava et al. (9) and Zaprutko et al. (2) confirm the tendency of the students' opinions and surmise that more than 50% of patients might be capable of working during remission of schizophrenia.

In spite of the fact that Magliano et al. (15) presented that majority of students of medicine and

Table 2. Percentage distribution of answers as per geographical location and the students' faculties.

Question	Location	Faculty	Type of response			p value
			Agree (%)	Hard to say (%)	Disagree (%)	
1. "patient's fear of looking for a job"	PL	Medicine	84.78	10.38	4.84	0.711
		Pharmacy	87.40	8.14	4.46	
		Public Health	82.61	10.14	4.87	
	EU	Medicine	77.42	14.52	8.06	0.673
		Pharmacy	75.71	18.57	5.71	
	2. "patient's willingness to work"	PL	Medicine	73.36	17.30	9.34
Pharmacy			56.69	27.03	16.27	
Public Health			52.17	27.54	20.29	
EU		Medicine	62.90	20.97	16.13	0.901
		Pharmacy	60.00	21.43	18.57	
3. "fewer inpatients stays and better QOL"		PL	Medicine	56.60	27.08	16.32
	Pharmacy		49.08	33.77	17.15	
	Public Health		42.03	37.68	20.29	
	EU	Medicine	46.77	29.03	24.19	0.518
		Pharmacy	54.29	22.14	23.57	
	5. "impact of non-pharmacological therapies for job chances"	PL	Medicine	86.51	12.11	1.38
Pharmacy			86.61	10.76	2.62	
Public Health			86.96	11.59	2.03	
EU		Medicine	85.48	9.68	4.84	0.012
		Pharmacy	75.00	24.29	0.71	

Source based on our own studies: PL - Poland, EU - other European Union countries

psychology claimed that people affected with schizophrenia are dangerous and unpredictable, the same study confirmed that educational interventions led to the significant change of students' beliefs about schizophrenia. Hence, the importance of suitable lectures and trainings from the beginning of medical and related (e.g. psychology) studies. Well-educated students also in the field of social economy may contribute, as open-minded health care providers, to better social awareness concerning mental disorders and to the reduction of economic burden of schizophrenia.

Considering the problem of getting a competitive job by people suffering from schizophrenia, it seems important that therapeutic solutions based on SE for instance should be popularized (3, 5, 17). SE is an evidence-based practice in psychiatric rehabilitation with its key point related to the idea known as "zero exclusion" (18), hence, no person declaring their willingness to work is excluded from receiving this kind of support. Therefore, it allows employment of much more patients than are actually employed (10, 19, 20). Besides, employment improves clinical and social functioning and quality of life, and reduces the number of hospitalizations (10, 20, 21). Hence, patients' employment may be cost-effective and may reduce direct and indirect costs likewise. Aside from these benefits, patients' employment may also lead to a reduction of costs generated by their caregivers which in South Korea, for instance, constituted 4.2% of overall costs of schizophrenia (14). In the study by Magliano et al. (21), the authors revealed that the patients' caregivers give up their employment and dedicate up to 9 h daily to their relatives, being therefore unable to work. Activity, however, helps avoid damage to self-esteem (22) which might be associated with unemployment of the patients and their healthy caregivers, hence solutions leading to a decrease of indirect costs of schizophrenia are important.

Furthermore, SE facilities could be considered as centers where patients work and participate in non-pharmacological therapies. As it has been presented in the study, non-pharmacological interventions like psychoeducation or social skills training are useful in finding and keeping employment. In addition to this, in the study conducted by Mueser and McGurk (3), this type of treatment was mentioned not only as effective in the field of employment but also in relation to independent living and enhancement of social relationships. Moreover, it seems that the increasing number of employed patients might lead to improvement of social awareness about the real course of schizophrenia and

about the social perception of those in the remission stage. Considering that a lack of knowledge about mental disorders is associated with negative attitudes toward schizophrenia and contribute to discriminating behavior (16), changes in the way of thinking about mentally ill persons might be crucial for stigma reduction.

In spite of the fact that there were some differences in answers obtained from respondents representing different faculties (Table 2), the answers provided by study participants in general seem to confirm their awareness of the situation in the labor market of people suffering from schizophrenia. Considering the results presented by Magliano et al. (15) and indicating that students might react less positively towards mentally ill patients, discriminating them simultaneously, the results obtained in our study might corroborate that study participants already got some knowledge about mental disorders, which allowed to reduce possible prejudices of schizophrenia. Nevertheless, it is important to emphasize that although the questionnaire was directed to students who completed at least the third year of studies (it was probably easier to present their opinions concerning schizophrenia) the return rate of questionnaires seemed not to be satisfactory. Hence, curricula and syllabuses need to be updated also in the field of social economy to remove the stigma and reduce the economic burden of schizophrenia. Suitable lectures and courses aimed at teaching the students about economic aspects of schizophrenia should give them many-sided knowledge in the field and should pay off in a cost-effective treatment as well as in reduced social isolation of people suffering from mental disorder. Well prepared students, as future decision-makers, should also contribute to the amendment of legislation associated with mental health care and emphasize the need of rationalization of spending on psychiatry which is underfunded in some countries (23).

Despite the importance of this issue, the study also has some limitations. First of all, the sample could have been larger. Although, the study was conducted among students who completed at least the third year of their studies, many potential participants, however, refused to join the study claiming that they have no knowledge of this field. It confirms that educational interventions are still needed and are necessary to reduce stigma as well as health and economic burden of schizophrenia. Another limitation of this study might be eliminated by the presentation of exact data about the country of origin of respondents. Nevertheless, as some of our respondents were Erasmus program participants or

could have completed several traineeships we decided to collect only information about their current place of residence. Although we assumed that English is a universal language, it would be useful to develop the questionnaire in other languages too e.g. Spanish, French or German and, thus, to receive more filled-in sheets. One of the limitations of this study was that the questionnaires had not been distributed among the lecturers. It could help us receive their feedback on educational programs and, hence, suggest the most effective updates. Although the study seems to be important, further international studies may be essential to collect data in this field and to update the conclusions.

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Ethical approval

This article does not contain any studies with human participants performed by any of the authors.

Conflict of interest

The Authors have no conflict of interest to declare.

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REFERENCES

1. Pervaiz F., Ahmad M., Hussain T., Idrees A., Yaqoob A., Abbas K.: *Acta Pol. Pharm.* 73, 175 (2016).
2. Zaprutko T., Kus K., Bilobryvka R., Rakhman L., Göder R. et al.: *Psychiatr Q.* 86, 569 (2015).
3. Mueser K.T., McGurk S.R.: *Lancet.* 363, 2063 (2004).
4. Marwaha S., Johnson S.: *Soc. Psychiatry Psychiatr. Epidemiol.* 39, 337 (2004).
5. Twamley E.W., Vella L., Burton C.Z., Becker D.R., Bell M.D., Jeste D.V.: *Schizophr. Res.* 135, 100 (2012).
6. Garcia-Ruiz A., Costillas L.P., Montesinos A.C., Alcalde J., Oyagüez I., Casado M.: *Health Econ Rev.* doi: 10.1186/2191-1991-2-8 (2012).
7. Marwaha S., Johnson S., Bebbington P., Stafford M., Angermeyer M.C. et al.: *Brit. J. Psychiatr.* 191, 30 (2007).
8. Mueser K.T., Salyers M.P., Mueser P.R.: *Schizophr. Bull.* 27, 281 (2001).
9. Srivastava A.K., Stitt L., Thakar M., Shah N., Chinnasamy G.: *Ann Gen. Psychiatr.* doi: 10.1186/1744-859X-8-24 (2009).
10. Burns T., Catty J., White S., Becker T., Koletsi M. et al.: *Schizophr. Bull.* 35, 949 (2009).
11. Knapp M., Mangalore R., Simon J.: *Schizophr. Bull.* 30, 279 (2004).
12. Rosenheck R., Leslie D., Keefe R., McEvoy J., Swartz M. et al.: *Am. J. Psychiatry.* 163, 411 (2006).
13. Gustavsson A., Svensson M., Jacobi F., Allgulander C., Alonso J. et al.: *Eur. Neuropsychopharmacol.* 21, 718 (2011).
14. Chang S.M., Cho S.J., Hong J.J., Hahm B.J., Lee H.J. et al.: *J. Korean. Med. Sci.* 23, 167 (2008).
15. Magliano L., Read J., Sagliocchi A., Oliviero N., D'Ambrosio A. et al.: *Psychiatry Res.* 219, 457 (2014).
16. Koike S., Yamaguchi S., Ojio Y., Shimada T., Watanabe K., Ando S.: *Soc. Psychiatry Psychiatr. Epidemiol.* 50, 1519 (2015).
17. Clark R.E., Dain B.J., Xie H., Becker D.R., Drake R.E.: *J Mental Health Policy Econ.* 1, 63 (1998).
18. Campbell K., Bond G., Drake R.: *Schizophr. Bull.* 37, 370 (2011).
19. McGurk S.R., Mueser K.T., DeRosa T.J., Wolfe R.: *Schizophr. Bull.* 35, 319 (2009).
20. Twamley E.W., Narvaez J.M., Becker D.R., Bartels S.J., Jeste D.V.: *Am. J. Psychiatr. Rehabil.* 11, 76 (2008).
21. Magliano L., Fadden G., Madianos M., de Almeida J.M., Held T. et al.: *Soc. Psychiatry Psychiatr. Epidemiol.* 33, 405 (1998).
22. Priebe S., Warner R., Hubschmid T., Eckle I.: *Schizophr. Bull.* 24, 469 (1998).
23. Zaprutko T., Nowakowska E., Kus K., Bilobryvka R., Rakhman L., Pogłodziński A.: *Acad. Psychiatry.* 39, 165 (2015).

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