THE OPINIONS OF ITALIAN PSYCHOLOGY STUDENTS ABOUT PEOPLE DIAGNOSED WITH DEPRESSION AND SCHIZOPHRENIA: A COMPARATIVE STUDY.

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Abstract

This study explored the opinions about depression and schizophrenia among Italian psychology students, and whether students' opinions changed during education. Of the 705 students who read a description of depression (N=275) or schizophrenia (N=430) and then completed a questionnaire on their opinions about the disorder, 490 made a correct diagnosis (depression=243/275; schizophrenia: 247/430) and were included in the study. Compared to schizophrenia-group students, depression-group students: more frequently mentioned psychosocial factors and less frequently heredity among the causes; were more convinced about the usefulness of psychological therapies and less about pharmacotherapies; had more prognostic optimism; had lower perception of unpredictability and dangerousness. Compared to 1st year students, 5th-year students (depression=105; schizophrenia=162): in both diagnostic groups more frequently cited heredity among the causes; in depression group, had lower perception of unpredictability; in schizophrenia-group, had higher perception of dangerousness and more prognostic pessimism. More education about stigma should be provided to psychology students.

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Introduction

At least 450 million people are diagnosed with mental disorders internationally. In western countries, these disorders are the single most common cause of disability adjusted life years lost (YLDs), accounting for 23% of YLDs. Depressive disorders alone affect 350 million people, while 21 million people are diagnosed with schizophrenia (1, 2). All these people are at risk of experiencing stigma and being discriminated in social and work opportunities (3-6) and access to health care services (7, 8).

Presenting mental illness as being "like any other medical illness" (9, 10), or the adoption of a causal model focusing on biogenetic factors has not reduced stigma (10, 11). People with mental disorders continue to be perceived as dangerous and unpredictable and to be discriminated against by the public, in some circumstances even more so than in the past (12, 13). However, differences in public views of mental disorders, including depression and schizophrenia, exist (12, 14, 15). Most lay people view depression mainly as a consequence of exposure to depressing psycho-social factors and as a temporary condition, but tend to view schizophrenia as a genetic brain disorder with an unfavorable prognosis and as an illness associated with high risk of aggressive

behaviors (5, 10, 13). Studies also report public preference for psychological treatments and the involvement of psychologist in the care of depression, and of long-term pharmacotherapies and the involvement of psychiatrists in schizophrenia (11, 16). Data from studies comparing public beliefs about causes of mental disorders in different periods of time, suggest that there is now an increment in the endorsement of neurobiological factors as causes in both depression and schizophrenia. In most countries, the public still prefer psycho-social explanations of both depression and schizophrenia (10). In the USA, most people now regard both depression and schizophrenia as neurobiological illnesses caused by chemical imbalance in the brain and that require drugs (13). Finally, while in schizophrenia the attribution of this diagnostic label seems to induce negative emotional reactions and to increase public pessimism about recovery, in major depression the attribution of a diagnostic label was found to be associated with positive effects in the public (17).

In clinical practice, the dominant biomedical model of mental disease has had marked effects on psychiatric care (11, 18). For instance, despite effective non-pharmacological treatments existing for both depression and schizophrenia (19-21), people with these disorders rarely receive the psychological support they need and continue taking drugs, partly because of lack of preferred alternative treatments (22, 23). Moreover, explanations of one's own mental illness as being due to biochemical imbalance of the brain may lead people with these disorders to greater acceptance of drug

treatments (23), greater scepticism about the effectiveness of psychological therapies, and prognostic pessimism overall (9).

Studies examining stigma in health contexts suggest that, like the public, the professionals have attitudes towards People with Schizophrenia (PWS) that are more negative than the attitudes towards People with Depression (PWD) (24-28). Studies also reveal that, among health professionals, psychologists have less stigmatizing attitudes and desire for social distance from people with severe mental disorders than general practitioners and psychiatrists (29). However, there is also evidence that psychologists are less willing to interact with PWS than with PWD (30).

As future health professionals, students from healthcare disciplines constitute crucial target populations for improving quality of care provided to people with mental disorders (31). Therefore, it is worthwhile examining students' views and to develop targeted education interventions to improve students' attitudes, where necessary. Studies of medical students found that in most cases these students have more positive attitudes toward PWD than toward PWS (32), and that medical students felt socially closer towards PWD than towards PWS (33). It has been also found that medical students perceived PWS as being more severely ill, and as more dangerous and unpredictable than PWD (33, 34). Contact with PWD, moreover, was found to be associated with reduced fear towards people with this disorder, and also with lower perception of dangerousness and unpredictability towards PWS (35). It has been also found that students' attribution of a

mental disorder to biogenetic factors is associated with greater social distance, mediated by the perception of dangerousness, in schizophrenia but not in depression; and that genetic attribution decreases the likelihood of helping PWS but has no effect on the likelihood of helping PWD (36).

Results from studies exploring students' views at different stages of their education show that students at the pre-clinical stage tend to share with the public a psychosocial causal model of schizophrenia, while students at the later clinical stage mostly adhere to the biogenetic model (33, 37, 38). Students' acquisition of psychiatric skills and psychiatric rotation showed limited effects on students' prejudices about people with schizophrenia, and on their pessimism about recovery (38-40). Other studies found that psychiatric knowledge was useful to improve students attitudes towards people with mental disorders and their confidence with psychiatric drugs (38, 41-47).

Findings from studies carried out among medical students cannot necessarily be generalized to psychology students. Unfortunately, few surveys have addressed psychology students' views. A study of 60 medical students and 61 psychology students (37) reported no significant differences in the mean stereotype scores towards PWS, and that both student groups had higher levels of negative stereotypes for schizophrenia than for depression. However, psychology students revealed more desire for social distance from PWS than medical students. The study also documented that causal explanations, provided within the framework of an educational intervention, had differential effects on

medical and psychology students (38). In particular, while medical students who favored biogenetic explanations over psychosocial ones reported less attribution of responsibility, psychology students who favored biogenetic explanations over psychosocial ones reported more pessimism about prognosis. Another study, examining the beliefs of 360 psychology students in Italy on a range of mental disorders, found that PWS were the most likely to be considered as highly dangerous, and to be strongly rejected (39). A biogenetic etiology of schizophrenia and a medical treatment approach were largely endorsed. Depression, however, which was mostly attributed to a psychosocial or bio-psychosocial etiology, was the target of less prejudice, being associated with low perceived dangerousness and social distance. For depression, psychological treatment approach was recommended electively (39). Finally, a USA study on stigma toward people with mental disorders in 159 undergraduate psychology students (40) reported that participants who felt personality traits were unchangeable were more likely to stigmatize individuals with mental disorders and desired more social distance. The study also revealed that biogenetic causal attribution was related to higher stigma, but not so when familiarity with people with mental disorders and perception of personality trait as unchangeable were taken into account.

We recently examined the beliefs about schizophrenia in 566 psychology students at the Campania University of Caserta, Italy (former name: Second University of Naples, Italy; 41). In the study, the most frequently cited causes of this disorder were

psychological traumas (68%) and heredity (54%), while 33% of students firmly believed that PWS could recover. The identification of schizophrenia in a ICD-10 clinical description of this disorder (63%) was associated with more frequent endorsement of biogenetic factors and less frequent endorsement of psychosocial causal factors compared with identification of other diagnosis or none in the same clinical description. Moreover, diagnostic labeling of schizophrenia was associated with prognostic skepticism, with higher confidence in pharmacological treatments and less confidence in the psychological therapies, and with higher perception of unpredictability and dangerousness. Finally, compared to 1st year students, those at their 4th and 5th year of psychology training more frequently reported heredity among the causes, and were more pessimistic about recovery of PWS.

Most studies on attitudes towards people with different mental disorders compared respondents' views irrespective of whether participants were able to identify the mental disorder in a corresponding description or not. Therefore, magnitude of differences in respondents' views of different mental disorders may have been biased or distorted by the attribution of an incorrect diagnostic label and by the effects of a given diagnosis on attitudes.

This study examined views of depression and schizophrenia among Italian psychology students and whether, in each diagnostic group, students' views changed from the 1st to the 5th year of psychology studies.

The views examined in the study were about:

- Causal beliefs
- Possibility of recovery
- Usefulness of psychological treatments
- Usefulness of pharmacotherapies
- Perception of dangerousness
- Perception of unpredictability
- Professionals to be involved in the treatment of the disorder.

The study was carried out at the Campania University of Caserta, Italy and it involved two groups of psychology students, both including 1st year and 5th year students. In the first group, students were invited to read a clinical description of depression and to give a diagnosis and then to complete a self-reported questionnaire on their opinions about the disorder. In the second group, students were invited to read a clinical description of schizophrenia, to make a diagnosis and then to complete the same questionnaire. This group is a subset of data collected in the 566 psychology students study described above (41). To control results for the attribution of an incorrect diagnosis - as mentioned above - only students who were able to correctly identify the disorder in a corresponding clinical description were included in the study sample.

Method

Participants and Procedure

Participants were students attending their 1st-year of general Psychology course or their 5th-year of Psychology training at the Campania University of Caserta, Italy in the academic years 2012-2013, 2013-2014, and 2015-2016. Students were contacted in classroom at the end of lessons and invited to participate on a voluntary basis on a survey on their opinions about mental health problems. To avoid discrimination against students who refused to participate, information on the voluntary evaluation was provided to students by the teacher orally, and also reported on the front page of the questionnaire. Students were invited to leave blank the questionnaire (contained from the second page of the tool) or not to give it back, if they did not want to participate in the assessment. Of the 705 students who were contacted, all accepted to participate in the survey.

In the first two years of the survey (academic years 2012-2013 and 2013-2014), all students who agreed to participate were invited to read a clinical description of schizophrenia (Appendix A) and to give a diagnosis, and then to complete the Opinion on Mental Illness Questionnaire (OQ), thinking about ‘‘*People with a condition like that reported in the description”.* In the third year of the survey (academic year 2015-2016), all students who accepted to participate were invited to complete the OQ thinking about ‘‘*People with a condition like that reported in the description”.* after reading a clinical description of depression (Appendix B) and making a diagnosis. Only students enrolled

in the academic years 2012-2013 or 2013-2014 who correctly identified schizophrenia and students enrolled in the academic year 2015-2015 who correctly identified depression in the corresponding clinical description were included in the study sample. Therefore, each student completed the OQ once, referring either to a clinical description of schizophrenia or of depression, depending of the year of the survey (schizophrenia description: 2012-2013 and 2013-2014; depression description 2015-2016).

The study was conducted in accordance with the academic rules of the Campania University of Caserta, with the Head of the Faculty of Psychology, and with approval from the local Research Ethical Board. Authors complied with APA ethical standards in the treatment of their sample.

Measures

The Opinions on mental illness self-reported Questionnaire (OQ) is a self-reported tool designed to explore respondent's views of a mental disorder (Magliano et al., 2004). This tool contains a clinical description of schizophrenia or depression (without naming the diagnosis), followed by a list of items exploring respondent's beliefs about: (a) the causes of the disorder (12 items); (b) recovery, effectiveness of available treatments and right of users and their families to be informed about the disorder and drug treatments (7 items); (c) the psychosocial consequences of the condition (i.e., problems that people with a given condition may experience in family and affective relationships, and in social and

occupational roles; social distance from and perception of recognizability, dangerousness and unpredictability of persons with the disorder - 21 items).

Four additional items explored respondents' belief about which professionals should be involved in the treatment. Finally, two open questions explored what is the most important and most frequent causes of the disorder. Respondents' beliefs about causes and appropriate professionals are assessed by yes/no items, while beliefs about b and c variables are rated on a 3-point scales, from 1= "not true" to 3= "completely true". Respondents are invited to complete the questionnaire's items in reference to "'*People with a condition like that reported in the description".*

The OQ's psychometric properties have been tested (intra-rater Cohen's *kappa* ranging from 0.50 and 1 for 74% of the items; subscales' Cronbach alpha ranging between .42 and .72; Cronbach alpha measured in the current study sample: .23 to .69). Given the aims of this study, only items exploring respondents' views of causes, recovery, effectiveness of drugs and of psychological treatments, recommended professionals, and perception of dangerousness and unpredictability of people with the disorder were included in this publication. Moreover, given the low alpha values found in the study sample (from .23 to .69) and the type of data collected (two distinct diagnostic groups, two distinct education stages) comparisons between groups were made on an item per item basis.

Data analysis

Chi squares (χ^2) were used to compare the beliefs of students who correctly identified depression with those of students who correctly identified schizophrenia about: a) causal explanations of the condition (12 items), b-c) usefulness of drugs and of psychological treatments (2 items); d) professionals to be involved in the treatment of the condition (4 items); e) possibility of recovery (1 item); and, f-g) dangerousness and unpredictability of people with the condition (2 items). The same test was used to investigate within group differences (i.e., depression group and schizophrenia group, distinctly) in the a-g variables between 1st and 5th year samples (two distinct groups). Statistical significance level was set at $p<.05$ with Bonferroni correction.

Results

Two-hundred and forty-three participants (88.4%) out of the 275 students who completed the questionnaire after reading the description of depression, and 247 (57.4%) out of the 430 students who completed the questionnaire after reading the description of schizophrenia, correctly identified the diagnosis. ($\chi^2=75.7$, df 1, $p<.0001$).

In the depression group (N=243), most students were female (202, 83.1%) and had a mean of 21.7 (± 3.3 *SD*) years. One-hundred and thirty-eight students were at their 1st year of psychology studies and 105 at their 5th year of studies. One-hundred and fifty-one (62.4%) students stated they knew at least one person with the disorder, 34 (N=242; 14%)

reported that they have had a partner and 4 (1.6%) that they had lived in the same house with a person with depression. In the schizophrenia group (N=247), participants were mainly female (218, 88.6%) and had a mean age of 23.8 (± 4.8 *SD*) years. Eighty-five percent of students were at their 1st year of psychology studies and 162 at their 5th year of studies. Seventy-eight (31.6%) students stated they knew at least one person with the disorder and 2 (N=246, 0.8%) reported that they have had a partner and 4 (1.6%) that they had lived in the same house with a person with schizophrenia. The diagnostic groups differed in participants' mean age (F=30.0; df 1,487, p<.0001) - lower in the depression group - and percentage of students reporting to know at least one person with the disorder and to have had a partner with the disorder , both lower in the schizophrenia group (χ^2=46.6, *df* 1, p <.0001; χ^2=31.2, *df* 1, p <.0001).

In the depression group, the most frequently reported causes were family conflicts, stress and psychological traumas, whereas in the schizophrenia group they were heredity, psychological traumas and chemical imbalance (Table 1). The factors most frequently cited as the most important and the most frequent causes of depression were psychological traumas (67/228, 29.4%) and stress (79/238, 33.2%) respectively, whereas the factor most frequently cited as the most important and frequent cause of schizophrenia was heredity (79/226, 34.9%, 76/232, 32.7%). Compared to the schizophrenia group, students in the depression group less frequently mentioned heredity (χ^2=85.1, *df* 1, p<.05) and misuse of street drugs (χ^2=12.9, *df* 1, p<.05) and more frequently reported stress (χ^2=87.3, *df* 1,

p <.05), family conflicts (χ^2=126.0, *df* 1, p<.05), disillusionment in love (χ^2=161.0 *df* 1, p<.05), frequenting bad company (χ^2=54.2, *df* 1, p<.05) and physical illness (χ^2=64.3, *df* 1, p<.05) as causes.

Compared to the schizophrenia group, in the depression group, students less frequently recommended a psychiatrist (depression: 56.2% vs. schizophrenia: 88.7%, χ^2=64.8, *df* 1, p<.05) and a neurologist (14.9% vs. 31.2%, χ^2=18.3, *df* 1, p<.05), and more frequently recommended a psychologist (91.7% vs. 73.3%, χ^2=28.7, *df* 1, p<.05).

As far as treatments usefulness, the percentage of students who were totally convinced of the usefulness of drugs was lower for depression than for schizophrenia (depression: 8.1%, vs. schizophrenia: 32.3%, χ^2=48.8, *df* 2, p<.05; Table 2). Conversely, the percentage of students who firmly believed that psychological interventions were useful in the treatment of the disorder was significantly higher in the depression group (75.4 % vs. 55.0%, χ^2=23.6, *df* 2, p<.05) (Table 2).

The percentage of students who were totally convinced of the possibility of recovery was significantly higher in the depression than in the schizophrenia group (69.7% vs. 26.1%, χ^2=87.2, *df* 1, p<.05). In the depression group, more students firmly believed that people with the disorder were not dangerous ("not true": 14.3% vs. 8.3%, χ^2=13.1, *df* 2, p<.05) and not unpredictable ("not true": 34.2% vs. 3.1%, χ^2=99.9, *df* 1, p<.05) than in the schizophrenia group (Table 2).

In both diagnostic groups, 5th year students more frequently reported heredity among the causes of the disorder than 1st year students (depression: 11.6% vs. 48.6%; schizophrenia: 30.6% vs. 89.5%, χ^2=90.8, *df* 1, p<.05, Table 3). In the depression group, 5th year students more frequently reported chemical imbalance among the causes (21.7% vs. 42.9%, χ^2=12.5, *df* 1, p<.05; Table 3), and were less convinced that "people with the condition are unpredictable" than 1st year students ("not true": 23.4% vs. 47.7%, χ^2=14.8 *df* 2, p<.05, Table 4). In the schizophrenia group, students at their 5th year of training were, compared to 1st year students, more skeptical about recovery ("completely true", 44.8% vs. 1.1%, χ^2=18.7, *df* 2, p<.05), more frequently recommended a psychiatrist (75.3% vs. 95.7%, χ^2=32.0, *df* 2, p<.05), and were more convinced that people with schizophrenia are dangerous ("completely or paretially true": 79.3% vs. 98.6%, χ^2=27.5, *df* 2, p<.05; Table 4).

Discussion

Results interpretation

The results of this study show that psychology students significantly differ in their views of depression and schizophrenia and also in their attitudes towards people with these disorders. The study also suggests that psychology education is associated with different changes in students attitudes toward each of these disorders. Future psychologists seem to view depression from a bio-psycho-social perspective and as a

condition having favorable outcome, and to have positive attitudes toward people with this disorder. However, psychology students seem to adhere to a medical model of schizophrenia, to associate this diagnosis with a poor prognosis and to perceive affected people as unpredictable and moderately dangerous.

The two groups present similarities and differences in their views of individual factors involved in the development of depression and schizophrenia. In particular, the percentage of students who endorsed psychological traumas as cause was similarly high in both groups, 70.8% and 64.0%. However, the percentages of students who reported other psychosocial causes ranged from 70.8% to 21.8% in the depression group and from 32.8% to 0.8% in the schizophrenia group. These data may suggest that students view depression as a condition related to many psychosocial adversities that may occur in the life (43), while they view schizophrenia mainly as a genetic illness (41). Although heredity was thought to be more relevant for schizophrenia than for depression, they were no such differences in the perceived relevance of chemical imbalance, illness in pregnancy and misuse of alcohol. These findings suggest that biochemical factors are now considered causes of depression and schizophrenia, whereas genetic factors are associated to schizophrenia, only.

While 75.4% of students in the depression group firmly believed that psychological therapies are useful in the treatment of this disorder, this percentage was 55.0% in the schizophrenia group. In this group, a lower percentage of students recommended

treatment by a psychologist. These findings are worrying in light of the involvement of future psychologists in the care of people with schizophrenia (44,45). These data also outline the need for providing students with further information on the range of evidence-based psychological therapies for schizophrenia and depression (46).

Students also appear different regarding their beliefs about possibility of recovery and perception of dangerousness and unpredictability in depression and schizophrenia. The more favourable prognosis and the lower perception of dangerousness/unpredictability in depression could be related to several factors, such as the greater opportunity for students to have personal contacts with people with depression, as also found in this study, given the high prevalence of this disorder (2).

Another factor could be the differential way of presenting schizophrenia and depression in the media. In particular, schizophrenia is used mainly as a metaphor of unreliability and non-metaphorically in news reporting violent crimes (47). The term 'depression', however, is used in reference to the common human experience of sadness, in response to personal and social difficulties.

The results of this study also reveal some changes in students' causal model and attitudes toward PWD and PWS during the course of their education. In both diagnostic groups, the percentage of students who cited heredity as a cause was higher among 5th year students than 1st year students. This finding confirms the increasing relevance assigned to biogenetic factors found in previous studies examining healthcare students'

causal models of mental disorders during their training (33,41,48). In the schizophrenia group, 5th year students resulted more pessimistic about recovery, and perceived these people as more dangerous to others, compared to 1st year students. This result confirms previous findings on the association of schizophrenia label with prognostic pessimism, and stresses the need to provide students with education on recovery and stigma in schizophrenia, including evidence-based education about the actual rates of violence in this group (30, 49, 50). Conversely, it is encouraging that 5th year students perceive people with depression as less unpredictable than 1st year students. Hopefully this result, suggesting beneficial effects of the acquisition of psychological skills and knowledge about depression on students' attitudes, will increase future psychologists willingness to work with these clients.

As far as the implications of this study findings, we have scheduled several initiatives to sensitize our psychology students to stigma, particularly in schizophrenia. In particular, an educational initiatives addressing "social dangerousness and incurability in schizophrenia'' is regularly held as mandatory for psychology students in their last stage of training (Magliano et al. 2014, 2016). This educational initiative, addressing common prejudices via scientific evidence and prerecorded audio-testimonies from people with schizophrenia has proven to be effective in reducing prognostic pessimism and perception of unpredictability among future psychologists. Moreover, this educational initiative has been found to be associated with the students' adherence to

more balanced biopsychosocial model and therapeutic approach to this disorder, denying neither the relevance of drug treatments nor the importance of psychological therapies in the recovery process. As far as depression, a video testimony has been associated to the clinical presentation of this disorder in the main Psychiatry course for 5th year psychology students. Finally, to stress the importance of integrated care for both schizophrenia and depression, practical training in evidence-based psychosocial approach for mental disorders, has also been included in the main Psychiatry course for 5th year psychology students.

Strengths and limitations of the study

This is the first study carried out in Italy comparing views of future psychologists about people diagnosed with schizophrenia and depression. Among the strenghts of the study is the relatively large sample size. Moreover, the selection of students who identified depression or schizophrenia in the ICD-10 clinical descriptions of these disorders allows the comparison of students' "true" beliefs toward them. The study has, however, several limitations that should be considered when interpreting its results: a) the sample is predominantly female (86%), a situation reflecting the high number of female students attending psychology in Italy (51); b) the inclusion of students from only one psychology school located in southern Italy; c) the fact that students' attendance to lessons is voluntary, therefore data cannot be generalised to not-attending students; d) the cross-

sectional design that does not permit definitive causal inferences regarding changes in attitudes over psychology education; e) the lack of data on views of depression and schizophrenia of psychology teachers; f) the way of data collection. Attitudes on depression were documented 1 and 2 years later compared to attitudes toward schizophrenia. This may have influenced differences in attitudes related to factors which differentiate groups across the years.

Most of these limitations will be addressed in future studies, adopting a randomized-controlled design, which are at their planning stage.

Conflict of interests. None.

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Appendix 1

Some people sometimes seem unable to distinguish between things that really happen and are experienced by other people, and things that happen only in their mind. Sometimes, these people believe or say things that seem bizarre or absurd to other people, or hear voices, smell things, or see images that other people do not. Sometimes, these people may have difficulty expressing their feelings or behaving appropriately (for instance, they may cry in response to a positive event, or may appear happy following an unpleasant one), or they may remain shut up in their house for a long time, or talk very little or not at all. They behave as if they lived in a world of their own, apparently without interest in anything or anybody. Sometimes they may have muddled thoughts, may invent odd or incomprehensible words, may lose the thread of the speech, or they may jump from one issue to another with no apparent reason.

Appendix 2

Some people sometimes feel sad, down, unable to feel pleasure, or to have interest for those activities they liked in the past. Sometimes, these people feel incompetent, may believe to be derided by the others, and make themselves feel guilty for trivial things. These people may have no hope for future, and when their feelings of sadness and being worthless become unbearable, they may decide to stop living. Sometimes, these people may have difficulties in eating and sleeping regularly, and may feel poor concentrated or

physically tired. Other times, they may feel irritable and get annoyed with the others for unimportant things.

Table 1 - Psychology students' opinions about causes of depression vs. schizophrenia.

Causes		Depression (N=243)		Schizophrenia (N=247)		
		N	%	N	%	χ^2
Psychological	Yes	172	70.8	158	64.0	
traumas	No	71	29.2	89	36.0	2.6
Heredity	Yes	67	27.6	171	69.2	
	No	176	72.4	76	30.8	85.1*
Stress	Yes	182	74.9	81	32.8	
	No	61	25.1	166	67.2	87.3*
Misuse of street	Yes	64	26.3	103	41.7	
drugs	No	179	73.3	144	58.3	12.9
Family	Yes	189	77.8	67	27.1	
conflicts	No	54	22.2	180	72.9	126.0*
Chemical	Yes	75	30.9	108	43.7	
imbalance	No	168	69.1	139	56.3	8.6
Misuse of alcohol	Yes	50	20.6	63	25.5	
	No	193	79.4	184	74.5	1.7
Incorrect therapy	Yes	55	22.6	52	21.1	
	No	188	77.4	195	78.9	0.2
Disillusionment	Yes	166	68.3	30	12.1	
in love	No	77	31.7	217	87.9	161.0*
Illness in	Yes	51	21.0	43	17.4	
pregnancy/childhood	No	192	79.0	204	82.6	1.0
Physical illness	Yes	86	35.4	15	6.1	
	No	157	64.6	232	93.9	64.3*
Frequenting	Yes	53	21.8	2	0.8	
bad company	No	190	78.2	245	99.2	54.2*

*$p<.05$ with Bonferrroni correction

Table 2 – Psychology students' opinions on depression vs. schizophrenia.

Items		Depression (N= 243)		Schizophrenia (N=247)	
		N	**%**	**N**	**%**
Drugs are useful in	Completely true	19	8.1	74	32.3
the treatment of °	Partially true	191	80.9	148	64.6
	Not true	26	11.0	7	3.1
	χ^2*	48.8*			
Psychological	Completely true	181	75.4	133	55.0
interventions are	Partially true	55	22.9	106	43.8
useful in the treatment of °*	Not true	4	1.7	3	1.2
	χ^2*	23.6			
°can recover *	Completely true	163	69.7	54	26.1
	Partially true	71	30.3	144	69.6
	Not true	0	0	9	4.3
	χ^2*	87.2			
°are dangerous to others	Completely true	10	4.3	29	12.7
	Partially true	187	81.3	181	79.0
	Not true	33	14.3	19	8.3
	χ^2*	13.2			
° are unpredictable*	Completely true	20	10.4	99	43.6
	Partially true	107	55.4	121	53.3
	Not true	66	34.2	7	3.1
	χ^2*	99.9			

° People with a condition like that reported in the clinical description; *$p<.05$ with Bonferroni correction

Table 3 - Psychology students' opinions about causes of depression and schizophrenia: 1st year vs 5th year within group comparisons.

Causes		Depression group (N=243)					Schizophrenia group (N=247)				
		1st year (N=138)		5th year (N=105)			1st year (N=85)		5th year (N=162)		
		N	%	N	%	χ^2	N	%	N	%	χ^2
Psychological	Yes	108	78.3	64	61.0		60	70.6	98	60.5	
traumas	No	30	21.7	41	39.0	8.6	25	29.4	64	39.5	2.5
Heredity	Yes	16	11.6	51	48.6		26	30.6	145	89.5	
	No	122	88.4	54	51.4	40.8*	59	69.4	17	10.5	90.8*
Stress	Yes	98	71.0	84	80.0		28	32.9	53	32.7	
	No	40	29.0	21	20.0	2.6	57	67.1	109	67.3	0.01
Misuse of	Yes	39	28.3	25	23.8		35	41.2	68	42.0	
street drugs	No	99	71.7	80	76.2	0.6	50	58.8	94	58.0	0.01
Family	Yes	104	75.4	85	81.0		28	32.9	39	24.1	
conflicts	No	34	24.6	20	19.0	1.1	57	67.1	123	75.9	2.2
Chemical	Yes	30	21.7	45	42.9		36	42.4	72	44.4	
imbalance	No	108	78.3	60	57.1	12.5*	49	57.6	90	55.6	0.1
Misuse of	Yes	25	18.1	25	23.8		13	15.3	50	30.9	

alcohol	No	113	81.9	80	76.2	1.2	72	84.7	112	69.1	7.1
Incorrect	Yes	37	26.8	18	17.1		22	25.9	30	18.5	
therapy	No	101	73.2	87	82.9	3.2	63	74.1	132	81.5	1.8
Disillusionment	Yes	91	65.9	75	71.4		15	17.6	15	9.3	
in love	No	47	34.1	30	28.6	0.8	70	82.4	147	90.7	3.7
Illness in	Yes	33	23.9	18	17.1		6	7.1	37	22.8	
pregnancy/childhood	No	105	76.1	87	82.9	1.6	79	92.9	125	77.2	9.6
Physical illness	Yes	45	32.6	41	39.0		3	3.5	12	7.4	
	No	93	67.4	64	61.0	1.1	82	96.5	150	92.6	1.5
Frequenting	Yes	40	29.0	13	12.4		2	2.4	0	0.0	
bad company	No	98	71.0	92	87.6	9.6	83	97.6	182	100	3.8

*p<.05 with Bonferrroni correction

Table 4 – Psychology students' opinions on depression and schizophrenia: 1st year vs 5th year within group comparisons.

Items		Depression group (N=243)		Schizophrenia group (N=247)	
		1st year (N=138)	5th year (N=105)	1st year (N=85)	5th year (N=162)
		N (%)	N (%)	N (%)	N (%)
Drugs are useful in the treatment of °	Completely true	6 (4.5)	13 (12.5)	14 (19.7)	60 (38.0)
	Partially true	105 (79.5)	86 (82.7)	53 (74.6)	95 (60.1)
	Not true	21 (15.9)	5 (4.8)	4 (5.6)	3 (1.9)
	χ^2	11.1		8.9	
Psychological interventions are useful in the treatment of °	Completely true	96 (71.1)	85 (81.0)	55 (66.3)	78 (49.1)
	Partially true	35 (25.9)	20 (19.0)	27 (32.5)	79 (49.7)
	Not true	4 (3.0)	0	1 (1.2)	2 (1.3)
	χ^2	5.1		6.6	
°can recover	Completely true	94 (70.7)	69 (68.3)	30 (44.8)	24 (17.1)
	Partially true	39 (29.3)	32 (31.7)	36 (53.7)	108 (77.1)
	Not true	0	0	1 (1.5)	8 (5.7)*
	χ^2	0.1		18.7*	
°are dangerous to others	Completely true	9 (6.8)	1 (1.0)	12 (14.6)	17 (11.6)
	Partially true	109 (82.6)	78 (79.6)	53 (64.6)	128 (87.1)
	Not true	14 (10.6)	19 (19.4)	17 (20.7)	2 (1.4)*
	χ^2	7.4		27.5*	
° are unpredictable	Completely true	16 (15.0)	4 (4.7)	37 (49.3)	62 (40.8)
	Partially true	66 (61.7)	41 (47.7)	37 (49.3)	84 (55.3)
	Not true	25 (23.4)	41 (47.7)*	1 (1.3)	6 (3.9)
	χ^2	14.8*		2.3	

People with a condition like that reported in the clinical description; *p<.05 with Bonferroni correction