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Original article

Perceived public stigma towards schizophrenia among healthcare students: the relationship with diagnostic labelling and contact with people with schizophrenia

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SUMMARY

Objectives

This study aimed at investigating the relationship between perceived public stigma towards people with schizophrenia (PWS) and their family members in a large sample of medical and psychology students. We hypothesised that: a) schizophrenia labelling would be related to greater perceived public stigma; b) contact with PWS would be related with lower perceived stigma; c) perceived public stigma would be similar between medical and psychology students and would be higher among students attending the clinical stage compared to their pre-clinical colleagues.

Methods

Participants were 592 students attending either the pre-clinical or clinical stage of coursework in Medicine and Psychology, at the University of Palermo (Italy) (Tab. I). Study measures included a short socio-demographic questionnaire, the Devaluation of Consumers Scale (DCS), and the Devaluation Consumers Families Scale (DCFS).

Results

Students who identified schizophrenia in an unlabelled clinical description expressed greater perceived public stigma towards PWS ($t = -2.895$, $p = 0.004$) and their family members ($t = -2.389$, $p = 0.017$). A trend-level association was found between previous contact with PWS and lower perceived public stigma ($t = 1.903$, $p = 0.058$), which became significant for those students who had a more extensive contact (Mann-Whitney $z = 2.063$, $p = 0.039$). Compared to medical students, psychology students perceived greater public stigma towards PWS. No difference was observed between students at different stages of their academic coursework (Tab. II). In a multivariate linear regression model, schizophrenia labelling and degree course predicted perceived public stigma towards severe mental disorders.

Conclusions

This study replicated previous findings on the relationship between public stigma towards PWS, schizophrenia labelling, and contact with PWS. Perception of public stigma was similar among pre-clinical and clinical students and greater among psychology students. The findings suggest the importance of promoting a critical awareness of negative stereotypes towards schizophrenia among healthcare students, since the beginning of their coursework. In addition to correct information about schizophrenia, anti-stigma intervention should include contact with PWS who live in the community.

Key words: perceived public stigma, stereotype, schizophrenia, psychotic disorders, healthcare students

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Introduction

An increasing body of literature has recognised the high prevalence and

the detrimental effects of stigma towards severe mental illness and, in particular, towards schizophrenia spectrum disorders [1-6]. Common stereotypes related to these conditions include pessimism about recovery, desire for social distance, and attribution of the responsibility of the disorder to these patients [1]. A systematic review found that the economic burden of mental health stigma substantially affects the possibility of a stable employment, the personal and family income, and the use of healthcare services by people affected with mental disorders [2]. Compared to individuals with depression or anxiety [7,8], people with schizophrenia (PWS) appeared particularly exposed to stigmatisation, as schizophrenia is often associated with stereotypes of dangerousness and unpredictability [9]. According to a worldwide multicentric study [10], 47% of PWS have experienced some discrimination in establishing or maintaining friendship, and 43% believed they were treated differently by family members because of their mental illness. Furthermore, 29% of PWS reported that they have been disadvantaged in finding or keeping a job and 27% in intimate or sexual relationships [10].

Research has consistently demonstrated that public stigma towards severe mental disorders significantly contribute to increase barriers to care for PWS [3] and to worsen the symptom and functional outcome of schizophrenia. In general, stigmatisation has been consistently related to a delayed search for psychiatric care by PWS – because of the fear of being labelled as mentally ill – and to poor adherence to pharmacological and psychosocial treatments [4-6]. Specifically, PWS who perceived higher levels of public stigma towards severe mental disorders reported lower self-esteem, poorer quality of life, and more severe depressive symptoms [11,12]. The effect of perceived public stigma on self-esteem and quality of life was mediated by stress-related stigma and self-stigma, i.e. by the extent to which PWS recognised to be part of a stigmatized group [11,13,14]. Furthermore, among college students with self-reported mental disorders, perceived public stigma predicted reduced treatment-seeking behaviours, and this effect was also mediated by self-stigma [15]. Studies on the general and clinical populations suggests that the relationship between perceived public stigma, low self-esteem, and barriers to care are relatively independent by the potential confounding effect of ethnicity [12,16]. There are some indications that perceived public stigma towards severe mental disorders might be higher among women and older people [17,18].

Stigma towards PWS has been also associated with delayed or inadequate care for physical health problems, such as cardiovascular, metabolic, and infectious diseases [19]. For instance, schizophrenia label was related to low availability of general practitioners to have PWS on their practice list and respond to their need for care [20]. Furthermore, healthcare providers who endorsed a stereotyped view of schizophrenia were more concerned about the adherence to treatment of PWS and were less likely to make specialist referrals and medical prescriptions when needed [21].

Along with PWS, their family members are often exposed to negative stereotypes and stigmatising behaviours in the community [22-26]. This so-called "affiliate stigma" can be expressed in the form of social distancing, attribution of responsibility for the condition of their family member affected with schizophrenia, and comments reflecting lack of knowledge and fear of the disorder [22]. Furthermore, caregivers of PWS complained about the lack of consideration for their worries, needs, and competences by healthcare providers, inadequate information flow, and low participation in healthcare decisions [22]. Several studies have suggested that affiliate stigma was greater among caregivers of PWS than among caregivers of people with depressive and bipolar disorders [24,25], although less stronger than those affecting caregivers of people with substance use disorders [27]. Affiliate stigma was consistently related to reduced self-esteem, increased family burden, lower perceived social support, and increased psychopathological symptoms [24-26, 28].

Given the relevance of public stigma towards PWS and their family members and its impact on pathways to care, it is crucial to assess to what extent future healthcare professionals perceived these stereotypes, in view of possible sensitisation interventions. Evidence suggests that stigmatising attitude towards severe mental disorders tend to establish early in healthcare professionals [5]. Studies found that medical and psychology students hold a more negative view of PWS than people with other mental disorders [29-35]. However, this view was found to be improved by interventions involving education and social contact with PWS [26,27,36,37].

Only a few comparative studies assessed stigma towards PWS among different degree course and across different stages of education. A German study on medical and psychology students observed no difference between the two groups [38]. According to two cross-sectional studies, students attending the fifth and the sixth year of the medical school perceived greater social distance towards PWS, compared to students attending the first and the second year [29,30,39,40]. However, another longitudinal study reported a reduction of students' stereotypes from the beginning to the end of their medical studies [41].

This study aimed at investigating the relationship between perceived public stigma towards PWS and their family members, the identification of schizophrenia in an unlabelled clinical vignette (diagnostic labelling), and any previous knowledge or contact with PWS in a sample of medical and psychology students. Furthermore, the study aimed at comparing the perception of public

stigma between medical and psychology students at different stages of their study course. We hypothesised that: a) schizophrenia labelling would be related to greater perceived public stigma; b) contact with PWS would be related with lower perceived public stigma; c) perceived public stigma would be similar between medical and psychology students and would be higher among students attending the clinical stage, compared to their pre-clinical colleagues.

Materials and methods

Participants and procedure

This was a cross-sectional study on a convenience sample of pre-clinical and clinical students attending the coursework in Medicine and Psychology, at the University of Palermo (Italy). Pre-clinical students were third-year medical and psychology students who have not yet attended an academic course in Psychiatry. Clinical students were fifth- and sixth-year medical students and fourth- and fifth-year psychology students who have attended a Psychiatry course providing information about the diagnosis, causes, and treatment of mental disorders. Students were approached at the end of their classes, informed about the study aims and methods, and ensured about the anonymity of data collection. Those willing to participate were invited to read an unlabelled description o<f schizophrenia according to ICD 10 criteria and to complete a short demographic questionnaire (including gender, age, and occupation of the main parental figure – which was considered as a proxy for family social class), the Devaluation of Consumers Scale (DCS), and the Devaluation Consumers Families Scale (DCFS) [23,42,43]. The Ethical Committee of the University Hospital "P. Giaccone" of Palermo (Italy) approved the study.

Measures

The Devaluation Consumers' Scale (DCS) and the Devaluation Consumers Families Scale (DCFS) were used to assess public stigma towards PWS and their family members [23,42,43]. Both questionnaires were rated on a 4-point scale, from "strongly disagree" to "strongly agree", with higher score indicating greater perceived public stigma. Within the DCS, five items assessed the perceived diminished patients' status in the society ("status reduction"; e.g., "Most people feel that entering psychiatric treatment is a sign of personal failure"), two items the reduced possibility to find a job or a stable relationship ("role restriction"; e.g., "Most employers will not hire a person who once had a serious mental illness if he or she is qualified for the job"), and one item difficulties in establishing friendship ("friendship refusal"; e.g., "Most people would not accept a person who once had a serious mental illness as a close friend"). Within the DCFS, four items assessed the social distancing from family members of PWS ("community rejection"; e.g., "Most people would rather not visit families that have a member who is mentally ill"), two items blaming parents for the disease of their family member ("causal attribution"; e.g., "Most people do not blame parents for the mental illness of their children"), and one item to the belief that these parents of were less responsible and caring than other parents ("uncaring parents", e.g., "Most people believe that parents of children with a mental illness are not as responsible and caring as other parents"). Mean scores of the total DCS and DCFS scales and of their subscales were calculated.

Schizophrenia labelling was defined as the ability to identify "schizophrenia" (*vs* depression, or anxiety, or nervous breakdown, or other unspecified mental or physical disorder) in a clinical description of schizophrenia according to ICD-10 criteria [40]. Contact with PWS was assessed using two questions. The first question asked the participants if they knew someone affected with the disorder described in the clinical vignette and was followed by a specifying question, which allowed for multiple responses. Responses to the specifying question were then classified as "family member", "partner", "friend", or "acquaintance" and were coded as "yes" or "no". The second question asked the participants if they had ever lived with someone affected with that disorder, who was not a family member.

Analyses

Demographic characteristics of the sample were compared using χ^2, Student's t-test, and ANOVA, as appropriate. Association of perceived public stigma with type and stage of their coursework, as well as with schizophrenia labelling and personal knowledge or previous contact with PWS were analysed using Student's t-test or Mann-Whitney z test, for variables non-normally distributed. Multivariate linear regression was used to investigate the effect of degree course on perceived public stigma (dependent variable), accounting for the effect of socio-demographic differences between medical and psychology students (i.e., gender and family social class). Significance level was set out at 0.05 for the total score of DCS and DCFS and to 0.006 for the subscale scores, applying Bonferroni correction. Analyses were carried out using STATA V12.0 IC.

Results

Participants in the study were 234 Medical students and 358 Psychology students. Three-hundred-eight were pre-clinical students and 284 were clinical students. Demographic characteristics of the sample were

reported in Table I. Compared to psychology students, medical students were mostly male and belonging to an upper social class.

Three-quarter of the sample (445, 76.86%) identified schizophrenia in an unlabelled clinical description. These students showed a greater perceived public stigma towards PWS (schizophrenia 2.89 (0.55) *vs* other diagnoses 2.73 (0.56); t = -2.895, p = 0.004) and their family members (schizophrenia 2.54 (0.57) *vs* other diagnoses 2.40 (0.55); t = -2.389, p = 0.017).

One-quarter of the sample (147, 25%) knew someone affected with schizophrenia, but only a trend-level association was found with perceived public stigma (previous knowledge 2.76 (0.56) *vs* no previous knowledge 2.86 (0.55); t = 1.903, p = 0.058). No difference in perceived public stigma was found between students who had previous contact with either a relative (56, 9.4%), or a partner (16, 2.5%), or a friend (56, 9.4%), or an acquaintance (35, 24%), compared to those who had not. However, the few students that have lived with PWS (17, 2.8%) reported lower perceived public stigma towards PWS (sum of rank = 168,996 *vs* 3,582, Mann-Whitney z = 2.063, p = 0.039).

Compared to medical students, psychology students perceived greater public stigma towards PWS and their family members (see Table II), while no difference was found between students at different stages of their academic course (i.e. pre-clinical *vs* clinical). The association between degree course and perceived public stigma was still evident after controlling for socio-demographic differences between the two groups (DCS total score: $F(4,561) = 3.80$; $p = 0.005$; $\beta = 0.18$, $p = 0.001$; DCFS total score: $F(4,551) = 7.99$; $p < 0.001$; $\beta = 0.23$, $p < 0.001$). When schizophrenia labelling and personal knowledge of PWS were also included in the regression model, perceived public stigma towards patients was positively predicted by degree course ($F(6, 541) = 4.02$; $p < 0.001$; $\beta = 0.19$, $p < 0.001$) and schizophrenia labelling ($\beta = 0.12$, $p = 0.004$). Perceived public stigma towards family members was positively predicted by degree course ($F(6, 525) = 5.77$; $p < 0.001$; $\beta = 0.23$, $p < 0.001$).

Discussion and conclusions

The aim of this study was to investigate the relationship between perceived public stigma, schizophrenia labelling, and contact with PWS. We found that schizophrenia labelling was associated with greater public stigma towards people with severe mental disorders and their family members. This is consistent with previous studies among healthcare students reporting an association between schizophrenia label and negative stereotypes, such as dangerousness, unpredictability, and incurability [30,31,35,40,44,45]. In addition, the schizophrenia label was related to a negative view of caregivers of PWS, such as social distancing and attribution of responsibility for the disease of their family member. The findings suggest

TABLE I. *Demographic characteristic of the sample.*

	Pre-clinical students		
	Medical (n = 98)	**Psychology (n = 210)**	**χ^2/Student's t**
Gender **Male n (%)**	48 (48.98)	24 (11.43)	52.601 (< 0.001)
Age **M (SD)**	21.71 (0.11)	22.28 (0.24)	-1.548 (0.098)
Family social class **High n (%)** **Middle n (%)** **Low n (%)**	 44 (46.83) 34 (35.42) 17 (17.89)	 18 (9.47) 106 (55.79) 66 (34.74)	50.842 (< 0.001)
	Clinical students		
	Medical (n = 136)	**Psychology (n = 148)**	**χ^2/Student's t**
Gender **Male n (%)**	62 (45.59)	18 (12.16)	39.135 (< 0.001)
Age **M (SD)**	24.15 (2.62)	24.09 (10.65)	0.056 (0.955)
Family social class **High n (%)** **Middle n (%)** **Low n (%)**	 54 (40.0) 53 (39.26) 28 (20.74)	 17 (11.64) 77 (52.74) 51 (35.17)	30.090 (< 0.001)

that, in order to promote a collaborative relationship between healthcare professionals and family members, affiliate stigma should also be part of anti-stigma interventions for healthcare students [46,47].

We found that contact with PWS was related to a lower perceived public stigma. Specifically, we found that students who knew someone with schizophrenia and those who shared time and experience with him/her (e.g., by living in the same place) tend to perceive a less stigmatising attitude from the community. The findings are in line with some previous studies on high school and university students regarding the positive effect of social contact on mental health stigma. For instance, a cross-sectional study on pre-clinical, post-clinical rotation medical students, and psychiatrists, which observed that the more extensive was the contact to people with severe mental disorders, the lower were the stigmatising attitudes [48]. Moreover, a recent qualitative study on a four-days cohousing experience, involving patients with severe mental disorders and high school students, documented to what extent daily life interactions positively influenced mental health stereotypes and provided the students with a more realistic and integrated view of people affected with severe mental disorders [49].

The second aim of this study was to investigate whether perceived public stigma varied across the different academic programs and different stages of coursework. We found that perceived public stigma tend to be relatively stable over time, with no significant differences between students in the middle and the final stage of education. Previous cross-sectional studies on medical students found that perceived social distance towards PWS has increased between early (first/ second) and late years (fifth/ sixth) of their coursework [39,40]. Compared to these studies, the lack of differences observed in our sample might be due to the fact that we compared students at the final stage of the Medical and Psychology schools with students in the middle stage of their coursework, when beliefs about the social consideration of PWS might have been already established and might be less susceptible to change than at the beginning. Furthermore, we found that psychology students reported greater perceived public stigma, compared to medical students. Previous studies on college students found that perceived public stigma does not fully overlap with personal stigma, with participants reporting greater perceived public stigma than personal stigma [50,51], particularly if women [52]. In line with a study on social distancing towards PWS among university students [53], it might be also speculated that the different perception of public stigma towards mental disorders between medical and psychology students might have been also influenced by their future professional choices. In this regard, the prevision of future professional contacts with PWS and their families, which may be more common among psychology than among medical students, may have increased psychology students' perception of public stigma.

In summary, this study replicated previous findings on the relationship between schizophrenia labelling, social contact, and perceived public stigma towards PWS. In addition, the study found that perceived public stigma was greater among psychology than medical students and was substantially similar between pre-clinical and clinical students. These results should be interpreted in light for several limitations: first, the use of a convenience sample might have reduced the generalizability of the findings; second, the cross-sectional study design prevented any inferences on the relationship between academic program and perceived public stigma; third, the relationship between perceived public stigma and schizophrenia labelling and personal contact might have been confounded by other factors (e.g. the students' personal values and beliefs), here not assessed.

Given the influence that public stereotypes exert on the personal attitudes of the individuals [54], increasing students' awareness of such stereotypes is the first step

TABLE II. *DCS and DCFS distribution between the two samples.*

	Medical (n = 234)	Psychology (n = 358)	Student's t (p)
DCS total score M (SD)	2.74 (0.64)	2.91 (0.47)	-3.675 (< 0.001)*
DCS status reduction	2.78 (0.68)	2.98 (0.50)	-4.148 (< 0.001)*
DCS role restriction	2.78 (0.72)	2.92 (0.59)	-2.406 (0.016)
DCS friendship refusal	2.48 (0.77)	2.55 (0.71)	-1.101 (0.271)
DCFS total score M (SD)	2.36 (0.62)	2.60 (0.51)	-4.930 (< 0.001)*
DCFS community rejection	2.39 (0.65)	2.59 (0.55)	-3.958 (< 0.001)*
DCFS causal attribution	2.39 (0.70)	2.66 (0.60)	-4.862 (< 0.001)*
DCFS uncaring parents	2.20 (0.84)	2.50 (0.76)	-4.427 (< 0.001)*

*DCS: Devaluation Consumers' Scale; DCFS: Devaluation Consumers' Families Scale; *Associations statistically significant after Bonferroni correction for multiple testing*

to develop a more positive view. As the next step, students' opinions towards PWS should take advantage of specific anti-stigma interventions, involving both information and contact with PWS [55-57]. Furthermore, as public stigma may affect self-stigma [54,58], and the onset of schizophrenia commonly occurs in late adolescence/early adulthood [59], studies suggested that assessing and discussing stigmatising beliefs among college and university students may contribute to reduce the barriers to care for those students who are experiencing themselves severe mental health problems [52,60].

Ethical consideration

The study was approved by the IRB of the University Hospital "P. Giaccone" of Palermo (Italy)

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Conflict of interest

The authors declare to have no conflict of interest

Author contributions

All the authors significantly contributed to study conception, data acquisition, data analysis, or interpretation. All the authors participated in drafting the article or revising it for important intellectual contents.

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