Validation of the Italian version of the Devaluation Consumers' Scale and the Devaluation Consumers Families Scale

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Summary

Objectives

This study aimed to assess the psychometric properties of the Italian versions of the Devaluation of Consumers Scale (DCS) and the Devaluation of Consumer Families Scale (DCFS), two short-scales examining public stigma towards people with mental disorders and their relatives.

Methods

The scales were administered to 117 individuals with a clinical diagnosis of affective or non-affective psychoses (ICD 10 criteria F20-29, F30-33). Translation procedures were carried out according to accepted standards. Internal reliability was assessed using Cronbach's alpha coefficient. Convergent validity was evaluated in terms of correlation with the Global Functioning Scale (GAF) and with the Questionnaire on Users' Opinions (QUO). Known-group validity was assessed comparing patients at first-episode of psychosis and patients with a history of psychosis of at least 3 years (long-term psychosis).

Results

The overall Cronbach's alpha value was 0.85 for DCS and 0.81 for DCFS; subscales' alpha values ranged from 0.80 to 0.55 for DCS, and from 0.68 to 0.55 for DCFS. Negative correlations were found between the Italian DCS and the DCFS total score and the QUO affective problems (DCS -0.33; DCFS -0.235) and social distance subscales (DCS -0.290; DCFS -0.356). Moreover, the GAF positively correlated with some of the DCS and DCFS subscales. Patients with long-term psychosis had higher scores in most DCS and DCFS subscales.

Conclusion

The Italian translation of DCF and DCFS showed good internal consistency, known-group validity, and convergent validity. These psychometric properties support their application in routine clinical practice in Italy as well as their use in international studies.

Keywords

Perceived stigma • Stereotype awareness • Devaluation of Consumers Scale • Devaluation of Consumer Families Scale • Questionnaire on Users' Opinions

Introduction

Stigma is a factor associated with negative outcomes in severe mental disorders, especially in schizophrenia [1]. Stigma negatively affects the quality of life of people with mental disorders and their caregivers, as well as the short and long-term clinical course of psychotic disorders. Examples of the negative impact of stigma are delays in care seeking and treatment [2], poor therapeutic adherence [3], low social integration [4], and difficulties in finding or keeping a job [5]. These negative effects, taken together, result in an increased risk for clinical relapse and poor functional recovery.

Stigma may be expressed through three different levels: stereotyping (cognitions, beliefs), prejudice (emotions, feelings), and discrimination (behaviors). Furthermore, stigma is classified in three main types: public stigma, self-stigma, and experienced stigma. Public stigma refers to what the society or the majority of lay people believe about the person with mental health problems; self-stigma expresses the degree of internalization of the stigma by the victim; experienced stigma corresponds to objective discriminations [6]. According to the "modified labeling theory" [7], receiving a diagnostic label of schizophrenia increases the perception of public negative attitudes towards individuals affected with mental disorders (public stigma). In people with mental disorders, this "stereotype awareness" may lead to internalize such negative attitudes and to anticipate possible acts of discrimination [8]. In other words, stereotype awareness may significantly affect users' self-esteem and self-efficacy, further influencing quality of life and treatment-seeking behaviors. Indeed, it was demonstrated that insight, and therefore

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stigma, are associated with poor therapeutic alliance in patients with psychotic spectrum disorders [9].
Compared to stigma towards people with common and socially accepted mental disorders, such as depression [10 11], public attitudes are particularly negative towards People With Schizophrenia (PWS). A large number of studies confirmed that PWS are often viewed as dangerous, unpredictable, and socially impaired. These attitudes have been found associated with desire for social distance and prognostic pessimism [12-14].
Stigma not only invests people diagnosed with mental disorders, but also those around them, primarily their caregivers. The so-called "affiliate stigma" or "courtesy stigma" [6 15] refers to the process of being stigmatized because of an association with a stigmatized person. Affiliate stigma is associated with increased family burden, as well as with stereotype awareness and increased symptoms in patients [16 17], suggesting pervasive effects of the stigmatization process both on PWS and caregivers' quality of life.

Given the relevance of stigma in many domains of the life of people with severe mental disorders, it is worthwhile measuring stigma – by means of valid and reliable assessment tools – as a first step to promote sensitization and educational programs for the public. Some international assessment scales on stigma have been recently validated in Italian, such as the Attribution Questionnaire-27/AQ-27 [18], whereas other instruments, as the Questionnaire on Users' Opinions/QUO [19] and the Questionnaire on Families' Opinions/QFO [20] have been originally developed in Italy and subsequently used in different populations [21-23].
Within the EUGEI project, the most recent epidemiological European survey on psychotic disorders [24], stereotype awareness towards PWS and their family members were assessed using the Devaluation of Consumers Scale (DCS) and the Devaluation of Consumer Families Scale (DCFS)[25]. These short-scales stand out for their convenience of administration – since they require few minutes to be completed – the possibility of evaluating public stigma towards family members – not covered by other scales – and the ability to evaluate various features of public stigma towards mental disorders, such as social status reduction, friendship refusal, or community rejection. In this study, we report data on the assessment of the psychometric properties of the Italian versions of the DCS and the DCFS, both administered to a sample of 117 PWS.

Method

Participants and procedure

The scales were administered to individuals with a clinical diagnosis of schizophrenia (ICD 10 criteria F20), other non-affective psychoses (ICD 10 F21-29), or affective psychoses (F30-33) [26], attending mental health services of Palermo (Southern Italy) in the period 2010-2015. Inclusion criteria were: 1. age between 18 and 65 years; 2. being resident in Palermo; 3. diagnosis of psychotic disorders according to ICD-10 F20-29 or F30-33 criteria. Exclusion criteria were: 1. psychosis due to organic causes; 2. presence of severe learning disability.
Ethical approval was obtained for the EUGEI study by the ethical committee of the University Hospital "P. Giaccone" of Palermo. Potential participants were informed about the study aims and procedures, data anonymization (carried out by assigning to each participants a unique number key), and the possibility to withdraw from the study in any moment. Participants that agreed to participate in the study signed an informed consent and then completed the Devaluation of Consumers scale (DCS), the Devaluation of Consumer Families scale (DCFS), and the Questionnaire on Users' Opinions (QUO) about schizophrenia. Main socio-demographic characteristics were also collected by an ad hoc schedule. Symptom and disability severity were registered using the Global Assessment of Functioning (GAF) on the basis of clinical records and information provided by care coordinators.

Measures

The Devaluation of Consumers Scale (DCS)

The Devaluation of Consumers Scale (DCS) is an eight-item scale assessing stereotype awareness by patients with severe mental disorders [24-27]. Factorial analysis led to the identification of the following three-factor solution (total explained percentage: 68.6%): factor 1 "status reduction", describes the altered patients' status in society (five items, 28.7% of variance); factor 2 "role restriction", concerns a pessimistic view related to the possibility of finding a job or getting married (two items, 23.5%); and factor 3 "friendship refusal", accounts for difficulties in establishing friendships (one item, 16.4%). Internal consistence of the DCS was estimated as 0.82 [25].

The Devaluation of Consumers Families Scale (DCFS)

The Devaluation of Consumers Families Scale (DCFS) complements the DCS by assessing the perceived devaluation or discrimination towards family members of patients with severe mental disorders [24-26]. The seven items of the DCFS were grouped in three factors, explaining 71% of the variance. The factors were: factor 1 "community rejection", describes the tendency to avoid friendships and other forms of social contact

with caregivers of patients with psychiatric disorders (four items, 32.9% of variance); factor 2 "causal attribution", is related to the tendency to treat some people in a different way because of the disease of their family member, and to blame parents for the mental illness of their children (two items, 20.9%); and factor 3 "uncaring parents" expresses the view that children affected by mental disorders had received inadequate parental care (one item, 17.2%). The internal consistence of DCFS was estimated 0.77.

The DCS and the DCFS were forward-translated by an Italian psychiatrist and an Italian clinical psychologist, who agreed on the Italian translations of the two scales. Subsequently, the two translations were reviewed and approved by a committee of the EU-GEI research project coordination, including an Italian mother tongue researcher with expertise in psychosis. This was consistent with established methods for translating health status instruments [28].

The Questionnaire on Users' Opinions

The Questionnaire on Users' Opinions (QUO) assesses users' view of their own mental disorder. QUO includes 24 items on the psychosocial impact of severe mental disorders, grouped in the following six subscales: "affective problems" (7 items, Cronbach's alpha 0.73) referring to patients' difficulties in establishing relationships, friendships, and set up their own family; "social distance" (5 items, alpha 0.74), concerning perceived distance, lack of understanding, and fear of "the others" towards PWS; "usefulness of drug and psychosocial treatments" (3 items, alpha 0.56), accounting for benefits and side effects of psychiatric interventions; "right to be informed" (3 items, alpha 0.58) referring to users' right to be informed about own mental problem and treatments; "recognizability" (2 items, alpha 0.56) examining the belief that PWS are easily identifiable because of their symptoms and drugs' side effects; and "social equality" (4 items, alpha 0.55), exploring respondent's views of discriminations in social and work opportunities. Factor analysis identified two factors, the former accounting for social and affective impact of severe mental disorders (33.3%) and the latter being related to clinical outcome and usefulness of treatments for schizophrenia (19.5%) [19].

Global Assessment of Functioning

The DSM-IV Axis V Global Assessment of Functioning (GAF) scale is an established tool for the assessment of symptom severity and psychosocial functioning in clinical and research settings. GAF scales are rated on 1-100 level, where higher scores correspond to better functioning/absent or minor psychiatric symptoms, and lower scores indicate greater disability/more severe symptoms [29].

Data Analysis

Internal reliability was assessed using Cronbach's alpha coefficient on total scales and related subscales. Convergent validity was evaluated in terms of correlation with the GAF and, only for the subgroup of patients with long-term psychosis (n = 72), with the QUO; correlations were calculated using Pearson's r coefficient. Known-group validity was assessed by comparing patients with first-episode of psychosis (FEP) with patients affected by long-term psychosis (LTP). Differences between groups were tested by performing Student's t test. Statistical significance was set at $p < 0.05$. Analyses were performed using SPSS version 21.

Results

Sample

A total of 117 people with psychosis were assessed. Participants had a mean age of 36.32 (sd 12.33) and were mostly males (75, 64.1%), with high level of education (high school degree 53 (45.3%), middle school degree 45 (38.5%), primary school degree 19 (16.2%), and single (99, 84.6%).

Seventy-two out of 117 participants had a clinical history of at least 3 years of psychosis (mean illness duration 16.64 years, sd 9.93), while 45 participants were at their first-episode of psychosis (i.e. presenting for the first time to psychiatric services for psychotic symptoms). In both groups, most participants were males (patients with FEP 25 [55.6%] *vs* patients with long-term psychosis 50 [69.4%], $\chi^2 = 2.321$, p= 0.128), and with high level of education (middle school degree 20 [44.4%] *vs* 25 [34.7%] or high school degree 20 [44.4%] *vs* 33 [45.8%], $\chi^2 = 1.877$, p = 0.391). The two groups were different in their mean age (mean 29.98 [sd 11.38] *vs* 40.28 [11.26], t = -4.795, $p < 0.001$) and marital status (single 32 [71.1%] *vs* 67 [93.1%], $\chi^2 = 10.244$, p = 0.001).

Internal reliability

As reported in Table I, Italian DCS had moderate-high internal reliability both for the total scale (alpha 0.85) and the subscales (status reduction alpha 0.80; role restriction alpha 0.57). Similar level of internal reliability was found for the Italian DCFS (Table I).

Validity

Analysis of convergent validity showed that the GAF functioning subscale positively correlated with the DCS

TABLE I.
Reliability of the Italian Devaluation Consumers' Scale and the Italian Devaluation Consumers' Family Scale

	Items	Cronbach's alpha
DCS		
Total Score	8	0.851
Status reduction	5	0.806
Role restriction	2	0.558
DCFS		
Total Score	7	0.808
Community refusal	4	0.685
Causal attribution	2	0.558

DCS: Devaluation Consumers' Scale; DCFS: Devaluation Consumers' Families Scale.

role restriction subscale, while the GAF symptom subscale positively correlated with the DCFS community refusal subscale.

Negative correlations were found between the DCS and the DCFS total score and the QUO affective problems and social distance subscales. Moreover, the DCS status reduction and the DCS role restriction subscales negatively correlated with the QUO affective difficulties and social distance subscales, while the DCS friendship refusal correlated with the QUO usefulness of treatments and recognizability subscales. Finally, the DCFS community refusal and causal attribution subscales negatively correlated with the QUO social distance subscale, whereas the DFCS neglecting parents correlated with the QUO affective problems and social distance subscales (Table II).

Comparisons between the two groups (patients with FEP *vs* patients with LTP) revealed that participants with long-term psychosis had higher scores than participants at early stage of psychosis in all DCS and DCFS subscales, except for DCS status reduction and friendship refusal and the DCFS causal attribution subscales (Table III).

Discussion

The results of this study confirm that the Italian version of the DCS and DCFS are valid and reliable assessment tools to explore public stigma towards PWS and their relatives. The Italian DCS had an acceptable to good internal reliability for total scale (Cronbach's alpha 0.85), and subscales (status reduction: alpha 0.80; role restriction: alpha 0.57). Similarly, adequate level of internal reliability was found for the Italian DCFS, whose Cronbach's alphas were respectively 0.81 for total scale and 0.68 and 0.56 for subscales. These values are consistent with those reported in the original version [25], where internal consistency of the DCS and the DCFS were, respectively, 0.82 and 0.71.

The validity of the Italian DCS and DCFS was investi-

TABLE II.
Convergent validity of Italian Devaluation Consumers' Scale and the Italian Devaluation Consumers' Families Scale.

	QUO n = 72						GAF N = 117	
	Affective problems	Social distance	Usefulness of treatments	Recognizability	Social equality	Right to be informed	Symptoms	Functioning
DCS								
Overall score	-0.331**	-0.290*	0.042	-0.127	-0.053	0.156	0.112	0.135
Status reduction	-0.315**	-0.235*	0.004	-0.087	-0.057	0.157	0.067	0.095
Role restriction	-0.300**	-0.305**	0.001	-0.049	-0.058	0.119	0.152	0.192*
Friendship refusal	-0.177	-0.230	0.247*	-0.298*	0.014	0.089	0.126	0.081
DCFS								
Overall score	-0.235*	-0.356**	-0.004	-0.116	-0.087	0.014	0.157	-0.024
Community refusal	-0.185	-0.241*	0.023	0.129	-0.031	-0.002	0.205*	0.017
Causal attribution	-0.118	-0.318**	-0.077	-0.032	-0.169	0.085	0.016	-0.064
Neglecting_parents	-0.370**	-0.406**	-0.039	-0.107	-0.024	-0.079	0.138	-0.042

Pearson r correlations. ** Correlations statistically significant at p < 0.01 ; * Correlations statistically significant at p <. 0.05.
DCS: Devaluation Consumers' Scale; DCFS: Devaluation Consumers' Families Scale; QUO: Questionnaire on Users' Opinions; GAF: Global Functioning Scale.

TABLE III.
Known group validity of Italian Devaluation Consumers' Scale and the Italian Devaluation Consumers' Families Scale.

	Patients at their FEP n = 45	Patients with LTP n = 72	Students' t	p value
DCS	Mean (SD)	Mean (SD)		
Overall score	2.35 (0.62)	2.65 (0.62)	-2.539	0.012
Status reduction	2.42 (0.70)	2.66 (0.66)	-1.865	0.065
Role restriction	2.24 (0.67)	2.72 (0.76)	-3.429	0.001
Friendship refusal	2.18 (0.89)	2.44 (0.90)	-1.559	0.122
DCFS				
Overall score	1.98 (0.62)	2.37 (0.58)	-3.375	0.001
Community refusal	1.97 (0.60)	2.43 (0.60)	-3.863	<0.001
Causal attribution	2.10 (0.78)	2.31 (0.75)	-1.415	0.160
Neglecting_parents	1.75 (0.90)	2.24 (0.93)	-2.688	0.008

DCS: Devaluation Consumers' Scale; DCFS: Devaluation Consumers' Families Scale; FEP: first-episode psychosis; LTP: long-term psychosis; sd: standard deviation.

gated as known-group validity and as convergent validity. The higher mean scores of DCS and DCFS found in patients with long-term disease compared to those at their first-episode of psychosis (see Table 3) could be related to the greater experience of public stigma in the former. This is partially in line with a previous study reporting association between the DCS score and age [16]. It is likely that the higher mean score found among long-term psychosis participants is attributable to a deeper internalization of negative stereotype, as well as to participants' higher insight about their own condition, and to a greater likelihood of having experienced discrimination and marginalization [30 31]. Nevertheless, the lack of significant differences in the DCS status reduction and friendship refusal and the DCFS causal attribution suggests that these dimensions of public stigma might be perceived by PWS since the onset of the disease and do not vary substantially over time.

Both DCS and DCFS showed significant correlations with the QUO. In particular, the DCS status reduction and the DCS role restriction subscales positively correlated with affective difficulties and social distance as measured by QUO, while the DCS friendship refusal subscale negatively correlated with the QUO social recognizability subscale. This is consistent with previous studies on clinical samples of people with severe mental disorders showing that public stigma was strongly related to alienation, social withdrawal, and stereotypes endorsement [32 33]. Moreover, we found that the DCS friendship refusal subscale positively correlated with the QUO usefulness of treatments subscale, suggesting that perceived public attitude towards mental disorders is related with treatment-seeking behaviors. This association corroborates findings reported by Jennings et al. [34] on a large sample of college students. A further result concerns the negative correlations of all DCFS subscales with the QUO social distance subscale, pointing out at the effects of courtesy stigma on social relationships.

DCS and DCFS showed few correlations with the GAF subscales. Specifically, the DCS role restriction negatively correlated with the GAF functioning scale. This result is in line with previous studies showing a relationship between public stigma and functional outcome [35-37]. It is likely that psychosocial functioning and stereotype awareness are part of a vicious circle, in which worst functioning leads to greater discrimination in employment and social contexts, while perceived devaluation prevents PWS from looking for a job and intimate relationship, even in absence of experience of discrimination [24 38]. This study also found a positive relationship between symptoms severity (GAF symptoms scale) and perceived marginalization of the families (DCFS community refusal), which replicates the findings of previous research on the link between courtesy stigma and psychopathology [15 16]. These findings suggest that the course of severe mental disorders is related not only to perceived patient's devaluation but also to family devaluation, a condition further contributing to self-defeat and isolation of people with psychosis [39 40].

According to a cognitive model of psychosis, discrimination and stigma, along with other psychosocial stressors (i.e. childhood adversities, see [41 42]), might increase the risk for psychotic symptoms by promoting negative representations of the self and the others, favoring reasoning biases, and increasing the sensitivity of the biologi-

cal stress-response system (the so called "sensitization process"). Sensitization determines an impaired response to life events and social stress (including minor daily life hassles) that, in turn, may trigger delusion and hallucinations, increasing the risk for the onset of psychotic disorders or their relapse. Furthermore, anticipated and experienced discrimination may affect the course of the disease as a maintenance factor, by increasing negative affect and social isolation, lowering self-esteem, and fostering ineffective coping strategies[1 43-45]. Therefore, assessing public stigma in individuals with severe mental disorders might contribute to identify a relevant factor for the course and outcome of psychiatric diseases. Strategies to reduce discrimination should include both anti-stigma interventions, providing the public with information and contact with people with psychosis, and provision of psychosocial treatment to people with psychosis to reinforce their coping strategies and self-esteem[1 46-48].

The findings of this study should be interpreted with caution in light of several limitations, such as: the small sample size that might have affected the statistical power, the cross-sectional study design preventing inferences on causal relations, and the effect of potential, unmeasured confounders (i.e., self-esteem, depression, or perceived social support) on the association between DCS/DCFS, duration of illness, and QUO. Nevertheless, the Italian version of DCS and DCFS showed high internal consistency, relevant association with the stage of the disease, and mild-to moderate correlations with the QUO and the GAF. These encouraging results support the use of these scales in clinical and community settings in Italy. Moreover, because of their convenience of administration and the possibility to assess various dimensions of public stigma (including affiliate stigma towards family members of PWS), DCS and DCFS seem particularly suitable to assess public stigma in the community and how it is modified in response to anti-stigma campaigns [16 25 41].

Conflict of interest
None.

References

1 van Zelst C. *Stigmatization as an environmental risk in schizophrenia: a user perspective*. Schizophr Bull 2009;35:293-6.

2 Henderson C, Evans-Lacko S, Thornicroft G. *Mental illness stigma, help seeking, and public health programs*. Am J Public Health 2013;103:777-80.

3 Van Brakel WH. *Measuring health-related stigma—A literature review*. Psychol Health Med Routledge 2006;11:307-34.

4 Prince PN, Prince CR. *Perceived stigma and community integration among clients of assertive community treatment*. Psychiatr Rehabil J 2002;25:323-31.

5 Link BG, Mirotznik J, Cullen FT. *The effectiveness of stigma coping orientations: can negative consequences of mental illness labeling be avoided*? J Health Soc Behav 1991;32:302-20.

6 Goffman E. *Stigma: notes on the management of spoiled identity*. 1st edn. New York: Simon & Schuster 1963, p. 153.

7 Link BG, Cullen FT, Struening E, et al. *A modified labeling theory approach to mental disorders: an empirical assessment*. Am Sociol Rev 1989;54:400-23.

8 Corrigan P, Watson A, Barr L. *The self-stigma of mental illness: implications for self-esteem and self-efficacy*. J Soc Clin 2006;25:875-84.

9 Niolu C, Barone Y, Bianciardi E, et al. *Predictors of poor adherence to treatment in inpatients with bipolar and psychotic spectrum disorders*. Riv Psichiatr 2015;50:285-94.

10 Latalova K, Kamaradova D, Prasko J. *Perspectives on perceived stigma and self-stigma in adult male patients with depression*. Neuropsychiatr Dis Treat 2014;10:1399-405.

11 Kelly CM, Jorm AF. *Stigma and mood disorders*. Curr Opin Psychiatry 2007;20:13-6.

12 Mestdagh A, Hansen B. *REVIEW: Stigma in patients with schizophrenia receiving community mental health care: a review of qualitative studies*. Soc Psychiatry Psychiatr Epidemiol 2014;49:79-87.

13 Magliano L, Fiorillo A, De Rosa C, et al. *Beliefs about schizophrenia in Italy: a comparative nationwide survey of the general public, mental health professionals, and patients' relatives*. Can J Psychiatry 2004;49:322-30.

14 Magliano L, Read J, Rega S, et al. *The influence of causal explanations and diagnostic labeling on medical students' views of schizophrenia*. Acad Med 2011;1155-62.

15 Mak WWS, Cheung RYM. *Affiliate stigma among caregivers of people with intellectual disability or mental illness*. J Appl Res Intellect Disabil 2008;21:532-45.

16 Van Zels C, Van Nierop M, Oorschot M, et al. *Stereotype awareness, self-esteem and psychopathology in people with psychosis*. Mechelli A, editor. PLoS One 2014;9:e88586.

17 Phelan JC, Bromet EJ, Link BG. *Psychiatric illness and family stigma*. Schizophr Bull 1998;24:115-26.

18 Pingani L, Forghieri M, Ferrari S, et al. *Stigma and discrimination toward mental illness: translation and validation of the Italian version of the attribution questionnaire-27 (AQ-27-I)*. Soc Psychiatry Psychiatr Epidemiol 2012;47:993-9.

19 Magliano L, Fiorillo A, Del Vecchio H, et al. *Development and validation of a self-reported questionnaire on users' opinions about schizophrenia: a participatory research*. Int J Soc Psychiatry 2009;55:425-41.

20 Magliano L, Marasco C, Guarneri M, et al. *A new questionnaire assessing the opinions of the relatives of patients with schizophrenia on the causes and social consequences of the disorder: Reliability and validity*. Eur Psychiatry 1999;14:71-5.

21 Gutiérrez-Maldonado J, Caqueo-Urízar A, Ferrer-García M. *Effects of a psychoeducational intervention program on the attitudes and health perceptions of relatives of patients*

with schizophrenia. Soc Psychiatry Psychiatr Epidemiol 2009;44:343-8.

22 Caqueo-Urízar A, Gutiérrez-Maldonado J, Ferrer-García M, et al. *Attitudes and burden in relatives of patients with schizophrenia in a middle income country*. BMC Fam Pract 2011;12:101.

23 Nitsche I, Kallert TW. *Weisen Angehörige von Patienten mit unterschiedlichen psychischen Erkrankungen auch Unterschiede in ihrer Einstellung zu diesen Erkrankungen auf*? Nervenarzt Springer-Verlag 2006;77:791-9.

24 van Os J, Rutten BP, Myin-Germeys I, et al. *Identifying gene-environment interactions in schizophrenia: contemporary challenges for integrated, large-scale investigations*. Schizophr Bull 2014;40:729-36.

25 Struening EL, Perlick Link BG, et al. *Stigma as a barrier to recovery. The extent to which caregivers believe most people devalue consumers and their families*. Psychiatr Serv 2001;52:1633-8.

26 World Health Organization. *ICD-10: classificazione statistica internazionale delle malattie e dei problemi sanitari correlati: 10ª revisione*. Roma: Istituto poligrafico e Zecca dello Stato 2001.

27 Link BG, Struening EL, Neese-Todd S, et al. *Stigma as a barrier to recovery: The consequences of stigma for the self-esteem of people with mental illnesses*. Psychiatr Serv 2001;52:1621-6.

28 Sartorius N, Kuyken W. *Translation of Health Status Instruments*. In: Orley J, Kuyken W, editor. *Quality of life assessment: international perspectives. Proceedings of the Joint-Meeting Organized by the World Health Organization and the Fondation IPSEN in Paris, July 2-3, 1993*. Springer Berlin Heidelberg 1994, pp. 3-18.

29 Endicott J, Spitzer RL, Fleiss JL, et al. *The global assessment scale. A procedure for measuring overall severity of psychiatric disturbance*. Arch Gen Psychiatry 1976;33:766-71.

30 Quinn DM, Williams MK, Weisz BM. *From discrimination to internalized mental illness stigma: the mediating roles of anticipated discrimination and anticipated stigma*. Psychiatr Rehabil J 2015;38:103-8.

31 Staring A, Van der Gaag M, Van den Berge M, et al. *Stigma moderates the associations of insight with depressed mood, low self-esteem, and low quality of life in patients with schizophrenia spectrum disorders*. Schizophr Res 2009;115:363-9.

32 Brohan E, Gauci D, Sartorius N, et al. *Self-stigma, empowerment and perceived discrimination among people with bipolar disorder or depression in 13 European countries: The GAMIAN-Europe study*. J Affect Disord 2011;129:56-63.

33 Kao Y-C, Lien Y-J, Chang H-A, et al. *Evidence for the indirect effects of perceived public stigma on psychosocial outcomes: The mediating role of self-stigma*. Psychiatry Res 2016;240:187-95.

34 Jennings KS, Cheung JH, Britt TW, et al. *How are perceived stigma, self-stigma, and self-reliance related to treatment-seeking? A three-path model*. Psychiatr Rehabil J 2015;38:109-16.

35 Galderisi S, Rossi A, Rocca P, et al. *Pathways to functional outcome in subjects with schizophrenia living in the community and their unaffected first-degree relatives*. Schizophr Res 2016;175:154-60.

36 Karidi MV, Vasilopoulou D, Savvidou E, et al. *Aspects of perceived stigma: the Stigma Inventory for Mental Illness, its development, latent structure and psychometric properties*. Compr Psychiatry 2014;55:1620-5.

37 Thomè ES, Dargèl AA, Migliavacca FM, et al. *Stigma experiences in bipolar patients: the impact upon functioning*. J Psychiatr Ment Health Nurs 2012;19:665-71.

38 Thornicroft G, Brohan E, Rose D, et al. *Global pattern of experienced and anticipated discrimination against people with schizophrenia: a cross-sectional survey*. Lancet 2009;373:408-15.

39 Krupchanka D, Kruk N, Murray J, et al. *Experience of stigma in private life of relatives of people diagnosed with schizophrenia in the Republic of Belarus*. Soc Psychiatry Psychiatr Epidemiol 2016;51:757-65.

40 Angermeyer MC, Schulze B, Dietrich S. *Courtesy stigma--a focus group study of relatives of schizophrenia patients*. Soc Psychiatry Psychiatr Epidemiol 2003;38:593-602.

41 van Zelst C, van Nierop M, van Dam DS, et al. *Associations between stereotype awareness, childhood trauma and psychopathology: a study in people with psychosis, their siblings and controls*. PLoS One 2015;10:e0117386.

42 van Nierop M, van Os J, Gunther N, et al. *Does social defeat mediate the association between childhood trauma and psychosis? Evidence from the NEMESIS-2 Study*. Acta Psychiatr Scand 2014;129:467-76.

43 Garety PA, Bebbington P, Fowler D, et al. *Implications for neurobiological research of cognitive models of psychosis: a theoretical paper*. Psychol Med 2007;37:1377-91.

44 Garety PA, Kuipers E, Fowler D, et al. *A cognitive model of the positive symptoms of psychosis*. Psychol Med 2001;31:189-95.

45 Myin-Germeys I, van Os J. *Stress-reactivity in psychosis: evidence for an affective pathway to psychosis*. Clin Psychol Rev 2007;27:409-24.

46 Thornicroft G, Mehta N, Clement S, et al. *Evidence for effective interventions to reduce mental-health-related stigma and discrimination*. Lancet 2016;387:1123-32.

47 Basso L, Boggian I, Carozza P. et al. *Recovery in Italy: an update*. Int J Ment Health 2016;45:71-88.

48 Magliano L, Read J, Sagliocchi A, et al. *Social dangerousness and incurability in schizophrenia: results of an educational intervention for medical and psychology students*. Psychiatry Res 2014;219:457-63.