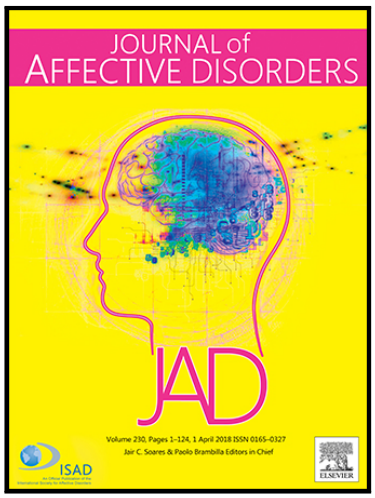

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Comparing discrimination among people with schizophrenia, affective and anxiety disorders. A multilevel study in five European countries

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Highlights

- This is the first study to compare experienced and anticipated discrimination in patients hospitalized with schizophrenia, affective and anxiety disorders, by using a consistent recruitment and assessment procedure and the same standardized measure (DISC-12).

- Both experienced and anticipated discrimination varies across diagnostic groups according to specific life areas.

- People with anxiety disorders who have been admitted to hospital have an increased likelihood to experience discrimination by the police and when receiving physical health care and to conceal their diagnosis with respect to people with schizophrenia.

- This study found that both experienced and anticipated discrimination are perceived, at least in some life domains, as more burdensome for people hospitalized with anxiety and affective disorders than schizophrenia.

ABSTRACT

Background. Most research on mental illness stigma has involved people with psychosis; less information is available for people with affective and anxiety disorders. We aimed to compare experienced and anticipated discrimination among people with schizophrenia, and affective and anxiety disorders.

Methods. People with schizophrenia (n=773), affective (n=1010) and anxiety disorders (n=372) were recruited during psychiatric admission across 5 EU countries. The Discrimination and Stigma Scale (DISC-12) was used. Multivariate mixed effect logistic regression models with a random effect for hospital and country were performed to explore patient characteristics associated with experienced and anticipated discrimination.

Results. With anxiety disorders, there were more reports of experiences of discrimination in social life (35%), intimate relationships (23.5%), and physical healthcare (19%); in schizophrenia, in relations with neighbours (23.6%) and mental health staff (21.7%); and in affective disorders, in parental role (22.8%). In multivariate analyses, anxiety was associated with increased likelihood of experiencing discrimination in police interactions (OR=1.675; p=0.038) and physical healthcare (OR=1.816; p=0.003), and reduced likelihood when starting a family (OR=0.474; p=0.01) as compared with schizophrenia. Affective (OR=1.367; p=0.004) and anxiety disorders (OR=1.354; p=0.034) were associated with increased likelihood of concealing a diagnosis compared with schizophrenia.

Limitations: As patients with affective and anxiety disorders were recruited from hospital inpatient units, their experiences may not be representative of all people with these disorders.

Conclusions. In a sample of people receiving inpatient treatment, experienced and anticipated discrimination are perceived, at least in some life domains, as more of a burden for people with affective and anxiety disorders than those with schizophrenia.

Keywords

stigma, discrimination, stereotypes, schizophrenia, affective disorders, anxiety disorders, multi-site studies, multilevel analysis

1.Introduction

Mental illness stigma is an overarching term which covers problems with knowledge (either ignorance or misinformation), attitudes (prejudice towards people with the condition), and behaviour (discrimination) (Thornicroft et al., 2007). Discrimination has a detrimental impact on the lives of people with mental health problems since it can lead to low rates of help-seeking, lack of access to care, under-treatment, material poverty, and social marginalisation (Lasalvia & Tansella, 2008). These effects can be a consequence of experienced or anticipated discrimination. The former refers to experiences of discrimination actually encountered by people with mental health problems in their daily life (e.g., when an individual is unreasonably rejected in a job application), whereas the latter refers to the anticipation of being rejected or treated negatively due to their mental health problems (e.g., when an individual does not apply for a job because he/she fully expects to fail).

Most studies on discrimination have involved people with psychosis (Thornicroft et al., 2009; Cechnicki et al., 2011; Uçok A, et al., 2012; Lasalvia et al., 2014; Koschorke et al., 2014; Hamilton et al., 2016; Kinson et al., 2018) and/or major depression (Lasalvia et al., 2013; Farrelly et al., 2014; Corker et al., 2015). Only a few studies have addressed discrimination among people with affective or anxiety disorders. Two early studies focusing on people with common mental disorders (Alonso et al., 2008; 2009) used a single question to assess overall discrimination rather than a multidimensional measure, as recommended by the literature (Brohan et al.,

2010). Two recent studies have compared discrimination among people with different psychiatric diagnosis. A nationwide population survey in Australia assessed experiences of discrimination in a community sample of people with depression, bipolar disorder, and anxiety disorders (Reavley & Jorm, 2015). The Viewpoint survey in the UK assessed experiences of discrimination in people with a range of psychiatric diagnoses (including anxiety, depression, and schizophrenia) recruited from secondary mental health services (Hamilton et al., 2016).

The literature has also shown that being hospitalised for a mental health issue is associated with increased perception of discrimination (Świtaj et al., 2016; Fresán et al., 2018). Therefore, studies done in an inpatient setting are urgently needed to achieve a more complete understanding of how discrimination, both experienced and anticipated, affects the lives of people with mental health problems.

This paper reports the results of a study investigating experienced and anticipated discrimination in a large sample of people with a range of psychiatric disorders (i.e., schizophrenia spectrum disorders, affective disorders, and anxiety disorders) recruited during admission to psychiatric inpatient units. This study aimed to address the following research questions: (1) What are the levels of experienced and anticipated discrimination in people with schizophrenia, affective disorders, and anxiety disorders who were recently admitted to psychiatric inpatient units? (2) Are reports of discrimination different among the three diagnostic groups? (3) Does the association between diagnosis and discrimination level change after adjusting for patients' characteristics, such as socio-demographics, social functioning, and clinical variables?

2.Methods

2.1.Study design and settings

This research was conducted within the framework of the COFI project (COmparing policy framework, structure, effectiveness, and cost-effectiveness of Functional and Integrated systems of mental health care) (Giacco et al., 2015; 2018), a European Commission-funded naturalistic study carried out in five countries (Belgium, Germany, Italy, Poland, and the UK) which aimed to compare

specialisation and personal continuity of care on a series of clinical and social outcomes. Patients entered the present study following admission to a psychiatric inpatient unit. Fifty-seven hospitals were included across the five EU countries. The hospitals included were identified through contacts of the national research groups; their geographical locations are reported in the protocol paper (Giacco et al., 2015).

2.2.Participants

Patients were included if they: (1) were aged 18 years or more; (2) had an ICD-10 diagnosis of schizophrenia and psychotic disorder (F20-29), affective disorder (F30-39), or anxiety/somatisation disorder (F40-48; the primary diagnosis was established from medical records or clinician's report at discharge from hospital); (3) were currently hospitalised in a general adult psychiatric inpatient unit; (4) had sufficient command of the host country language to provide written informed consent and understand the questions in the research interviews; and (5) had capacity to provide informed consent. Patients were excluded if they had: (1) a diagnosis of organic brain disorders, or (2) cognitive impairment that was too severe to provide data using the study instruments. All patients involved in the evaluation provided written informed consent.

2.3.Recruitment and data collection

Between October 2014 and December 2015, we screened and recruited consecutively admitted patients to the participating hospitals within two days of admission. Patients were followed up for one year from their index admission. Details on the overall recruitment and data collection are given elsewhere (Giacco et al., 2018). Briefly, of the 14,354 eligible patients, 7302 were enrolled in COFI (1043 in Belgium, 1061 in Germany, 1118 in Italy, 1374 in Poland, and 2706 in the UK). One year after the index admission, a sub-group of patients randomly selected from the whole sample and stratified based on the ICD-10 diagnostic group and type of index admission (first or previous) were evaluated with a set of standardised measures assessing patient-rated outcomes. These randomly selected patients were approached by the COFI research team and, if they agreed to participate, were given face-to-face interviews. Of

the 4199 randomly selected patients, 2181 consented to be interviewed, and 2172 were also assessed with the Discrimination and Stigma Scale.

2.4.Assessment measures

The Discrimination and Stigma Scale (DISC-12) is a standardised interviewer-delivered measure. This instrument has shown good psychometric properties (Brohan et al., 2013) and it has been used in different settings and clinical populations worldwide (Thornicroft et al., 2009; Lasalvia et al., 2013). In this measure, discrimination is operationally defined as unfair or negative behaviour that people with mental health problems may experience in everyday life due to their psychiatric condition. In the first section (12 items), respondents are asked to report experiences of discrimination (e.g., "Have you been treated unfairly in making or keeping friends?") they may have encountered because of their mental health problems over the past 12 months in a wide range of everyday life domains (e.g., work, marriage, parenting, housing, leisure, dating or intimate relationships, etc.). In the second section (4 items), participants are interviewed about how they have limited their social participation (applying for a job, looking for a close relationship, undertaking another personally important activity, concealing their diagnosis) due to the anticipation of being discriminated against (e.g., "Have you stopped yourself from applying for work?"). Respondents who agreed with these items indicated that they not only anticipated discrimination, but also avoided activities and consequently gave up on life goals. Responses in both the experienced and anticipated discrimination sections were rated on a 4-point Likert scale ('0'= not at all; '1'= a little; '2'= moderately; '3'= a lot).

For the purpose of analysis, ratings in each DISC-12 item were dichotomised as '1' (discrimination) in the case of rating 'a little', 'moderately' and 'a lot' and '0' (no discrimination) in the case of 'not at all'.

The following variables, collected during the admission index, were also included in the analysis. Collected socio-demographic characteristics included age, sex, marital status, and educational level. The Objective Social Outcomes Index (SIX) (Priebe et al.,

2008) provided a summary score of social functioning, ranging from '0' (very poor social situation) to '6' (very good social situation). SIX captures domains of employment (none='0', voluntary or protected or sheltered work='1', regular employment='2'), accommodation (homeless or 24h supervised='0', sheltered or supported accommodation='1', independent accommodation='2'), living situation (living alone='0', living with partner or family='1'), and contact with friends (not having met a friend within the past week='0', having met at least one friend in the past week='1'). Clinical variables included psychiatric co-morbid disorders (defined according to the ICD-10), whether the current admission was the first one or not, formal status at admission (involuntary/voluntary), and severity of illness rated by treating psychiatrists with the Clinical Global Impression (CGI) (Guy, 2000), a 7-point scale ranging from '1' (normal) to '7' (extremely ill).

2.5.Statistical analyses

Descriptive statistics were computed for patients' socio-demographic data, social functioning, and clinical variables.

The association between diagnostic groups and discrimination and between diagnostic groups and socio-demographics and clinical characteristics in each of DISC-12 items were evaluated by χ^2 tests.The data frame was hierarchical, with a three-level structure, where a total of 2181 patients (at level 1) were nested within 55 hospitals (at level 2), which were nested within five countries (at level 3). The association between discrimination in the various DISC-12 items and each patients' characteristics—including socio-demographics (age, sex, marital status, educational level), social functioning (SIX), and clinical variables (diagnosis, psychiatric co-morbidity, CGI, first admission, voluntary admission)—was explored by univariate random intercept logistic regression models with hospital and country as random effects. Those variables for which the p-value was less than 0.10 were entered in multivariate random intercept logistic regression models with hospital and country as random effects. Diagnosis was used as a variable in the multivariate models, regardless its statistical significance, on a theoretical basis. Finally, the amount of variation that can be attributed to the different levels in the data structure was estimated by Variance Partition Coefficients (VPCs).

Due to the high percentage of a response of 'not applicable' in some items, the models were re-estimated after assuming that all 'not applicable' categories were assigned value '0' (no discrimination). Analyses were performed using Stata version 15.0 for Windows. All p-values were two-tailed with an accepted significance level of 0.05.

3. Results

3.1. Participants' baseline characteristics

The socio-demographic and clinical characteristics of the participants in this study (n=2181) are shown in Table 1.

Insert Table 1 about here

Of the participants, 46.9% had a primary diagnosis of affective disorder (ICD-10, F30-F39), 35.9% of schizophrenia and related psychoses (F20-F29), and 17.2% of anxiety disorder (F40-F48). For both affective and anxiety disorders, the specific ICD-10 sub-codes are also given, together with percentages within each group. Overall, 20% of patients were compulsory admissions, although the proportions of compulsory admissions widely varied across sites (7%, Germany; 8.5% Italy; 10%, Poland; 16.7%, Belgium; 42.7%, UK), and substantially overlapped with those reported for the corresponding countries (Salize and Dressing, 2004).

It should be noted that the distribution of baseline characteristics of patients included in this study substantially overlaps with that of patients recruited in the whole COFI sample (mean age, 42.4 years, SD 14.3; male, 52.3%; married/co-habiting, 25.3%; F20, 41.0%; F30, 49.3%; F40, 18.3%; voluntary admission, 77.8%; CGI mean score, 4.3, S.D 1.2; SIX mean score 3.7, SD 1.4) (Giacco et al., 2018).

3.2. Experienced and anticipated discrimination across diagnoses

Levels of experienced and anticipated discrimination across the three diagnostic groups, together with percentages of 'not applicable' responses for each DISC-12 item, are shown in Table 2. Due to the distinct life domains covered by the DISC-12, no multiple testing adjustments were performed. For ease of reading and interpretation, the DISC-12 items were grouped according to underlying conceptual domains (i.e., social life, employment, family, accommodation, and public services).

Insert Table 2 about here

Overall, the life areas where participants within each diagnostic group most frequently reported experiences of discrimination (about 30% of cases) were relationships with the family, making or keeping friends, and social life.

When discrimination experiences between diagnostic groups were compared, a number of significant differences were found. People with schizophrenia reported more experiences of discrimination in relationships with neighbours, relationships with mental health staff, and housing compared to people with anxiety and affective disorders. People with anxiety disorders more frequently reported discrimination in intimate relationships, social life, and getting help for physical health problems compared to people with affective disorders or schizophrenia. People with affective disorders reported more experiences of discrimination in relation to their parental role as compared to people with schizophrenia or anxiety. Both people with anxiety disorders and schizophrenia reported more experienced discrimination than people with affective disorders when using public transportation and during interactions with the police.

There were also significant differences between diagnostic groups regarding anticipated discrimination. People with anxiety disorders more frequently stopped themselves from having a close personal relationship and felt the need to conceal their diagnosis in comparison to people with schizophrenia or affective disorders.

Within the affective disorder group, we compared experienced and anticipated discrimination between bipolar disorder (F30-F31; n=323) and depression (F32-F39; n=687). Bipolar patients reported more discrimination than depressed patients in finding a job (χ^2, p=0.04) and relationships with neighbours (χ^2, p=0.01). Depressed patients more frequently concealed their diagnosis than bipolar patients (χ^2, p<0.001) No significant differences were found across the other DISC-12 items.

3.3.Association between discrimination and diagnosis adjusted for patients' characteristics

The univariate regression models—with each DISC-12 item as the dependent variable and each characteristic as the independent one—revealed a number of significant associations (data available from the Authors; unadjusted ORs for primary diagnosis are given in Table 3).

Insert Table 3 about here

Patients' characteristics with p<0.10 were entered into the multivariate regression models, with the exception of diagnosis which was included in each model on a theoretical basis, regardless of significance. By controlling for patients' other characteristics, most of the associations between diagnosis and experienced discrimination found in the univariate models were lost (see Tables 4a-e).

Insert Table 4a - Table 4e about here

Diagnosis was significantly associated with discrimination in five life domains. Diagnosis of an anxiety disorder was associated with an increased likelihood of experiencing discrimination during interactions with the police as compared to diagnosis of schizophrenia (Table 4d). Diagnosis of an anxiety disorder was also associated with increased likelihood of experiencing discrimination when getting help for physical health problems compared with diagnosis of affective disorders or schizophrenia (Table 4d). Conversely,

diagnosis of an anxiety disorder was associated with a reduced likelihood of discrimination when starting a family compared with diagnosis of schizophrenia (Table 4c). Moreover, compared with affective disorders, diagnosis of an anxiety disorder was associated with an increased likelihood of experiencing discrimination in one's social life (Table 4a) and when taking public transportation (Table 4d).

With respect to anticipated discrimination, both diagnoses of affective and anxiety disorders were associated with a greater likelihood of concealing the diagnosis compared with diagnosis of schizophrenia (Table 4e).

For the majority of DISC-12 items, the re-estimation of the multivariate models by assuming that all 'not applicable' categories had a value of '0' (no discrimination) did not change the direction or statistical significance of the association between diagnosis and discrimination. However, there were three exceptions: diagnoses of either affective or anxiety disorders had an increased risk of discrimination in one's role as a parent, while a diagnosis of anxiety disorder was no longer significantly associated with starting a family or interactions with the police ($p=0.062$ and $p=0.057$, respectively; data available from the Authors).

A number of social and clinical factors were found to be significantly associated with experienced discrimination. Overall, older age was associated with a reduced likelihood of discrimination in most DISC-12 items. Being male was a protective factor for discrimination when getting help for physical health problems and in the role of a parent. Higher objective social functioning, as measured by the SIX score, was associated with a reduced likelihood of discrimination in most of the DISC-12 items, whereas it was associated with an increased likelihood of discrimination when keeping a job. Repeatedly hospitalisation was associated with an increased likelihood of discrimination in a number of DISC-12 items. As expected, voluntary admission was associated with a reduced risk of discrimination by the police, but with an increased likelihood of discrimination in other areas such as social life, keeping a job, marriage, and relationship with the family. Psychiatric co-morbidity was associated with an increased risk of discrimination in most of the DISC-12 areas.

Similarly, older age, being male, and being married were all associated with a reduced likelihood of anticipated discrimination, whereas having lower objective social functioning was associated with increased anticipated discrimination.

When considering the fraction of variance explained by the three levels addressed in the multivariate analyses (i.e., country, hospital, patient), we found that the estimated variance of the random intercepts for the country and hospital level, respectively, were different from zero for all the DISC-12 items. These findings indicate the presence of heterogeneity in experienced discrimination with respect to countries and hospitals, which is unaccounted for by diagnosis and other patients' characteristics. However, the variance partition coefficients (VPCs) showed that most percentages of variation across the different DISC-12 items, ranging from 82.2% (starting a family) to 95.6% (making/keeping friends), were dependent on patient-level characteristics (see Figure 1a). A small percentage of the overall variation in experienced discrimination, ranging from 0.5% (public transport) to 11.8% (personal safety and security), was due to variation between countries, while variation between hospitals ranged from 0.9% (dating/intimate relationships) to 12.0% (public transport).

Insert Figure 1a about here

Similarly, most of the variation in anticipated discrimination, ranging from 90.6% (applying for education) to 94.8% (close personal relationships), was due to patient-level characteristics (Figure 1b).

Insert Figure 1b about here

4.Discussion

This study involved severely ill patients with schizophrenia, affective disorder, or anxiety disorders who were admitted to inpatient psychiatric units. In examining and comparing experienced and anticipated discrimination across diagnoses, we found that people with anxiety disorders report higher levels of experienced discrimination than people with schizophrenia in their social life, intimate relationships, and when seeking care for physical health problems. People with anxiety and schizophrenia report similar levels of discrimination in interactions with the police and when using public transportation. People with schizophrenia report more discrimination than other diagnoses in relationships with neighbours, relationships with mental health staff, and housing. This latter finding is consistent with past literature (Thornicroft et al., 2009; Farrelly et al., 2014; Corker et al., 2015).

Previous reports indicate that people with anxiety disorders experience mental illness stigma (Curcio & Corboy, 2020). Our findings provide additional evidence that, at least in a sample of hospitalised patients, discrimination affects the lives of people with anxiety disorders to a similar degree as those with schizophrenia. Indeed, in some life domains, discrimination seems to be more of a burden for people with anxiety disorders than for those with schizophrenia. For instance, people with anxiety disorders have more than an 80% increased likelihood of experiencing discrimination when seeking care for physical health problems and more than a 60% increased likelihood of experiencing discrimination in interactions with the police. These findings controlled for several social and clinical variables, and therefore, can be considered robust. Based on these findings, it can be suggested that people with anxiety disorders deserve additional attention in these specific areas of their lives.

Additional variables contributed to experienced discrimination of people with anxiety disorders in their interactions with the police, since respondents experienced greater discrimination if they also had repeated psychiatric hospitalisations in the past, and if their index admission had been compulsory (the latter two factors are both indicators of illness severity). Similarly, patients with anxiety reported greater discrimination when getting help for physical health problems if they were also female and had lower objective social functioning.

Our findings may also be interpreted in light of the nature of anxiety itself. The literature has reported that people with anxiety disorders, due to cognitive biases in processing ambiguous information and in emotional recognition, may have greater sensitivity in detecting potential threats in the surrounding environment and in judging neutral social cues as threatening (Mohlman et al. 2007; Demenescu et al., 2010). An alternative explanation for the higher reported levels of experienced discrimination found in people with anxiety disorders compared with those with schizophrenia is that the former might not accept stigma-related loss of social status or might perceive it as unfair. In contrast, people with schizophrenia might have internalised the negative stereotypes about their diagnosis and accept their discrimination as fair, according to the "perceived legitimacy of discrimination" process (Corrigan and Watson, 2002).

It should be noted that, in our study, factors other than diagnosis played a more relevant role in experienced discrimination. Controlling for other variables, age and objective social functioning (as assessed by the SIX score) were found to be associated with discrimination in, respectively, nine and ten life domains of the DISC-12. This finding confirms previous reports that discrimination is more of a burden for younger people (Koschorke et al., 2014; Oshodi et al., 2014; Sarkin et al., 2015), suggesting the need for mental health services to provide interventions aimed at improving strategies to cope with experiences of discrimination as early as possible. We also found that poor social functioning increased the risk of experiencing discrimination in most life domains; this is consistent with findings from previous research (Lundberg at al. 2007; Lasalvia et al., 2012). In contrast, multivariable analyses showed that participants scoring high on the SIX score had an increased risk of discrimination in keeping a job. This seemingly paradoxical finding may be explained by considering the structure of the SIX, in that it is a summary score including four different domains: employment, accommodation, living situation, and contact with friends. Only employment (coded as 'regular employment' vs. 'other conditions') was significantly associated with discrimination in keeping a job in both univariate (OR=1.58, $p<0.01$) and multivariate (OR=1.54, $p<0.01$) logistic regression models. This means that, understandably, those who had a competitive occupation

were at increased risk of perceiving discrimination in employment (and probably were more afraid of losing their job due to their mental illness) than those who were not actively employed.

Previous research has found that anticipated discrimination is a major issue for people with schizophrenia or major depression since it prevents a substantial proportion of them from actively engaging in social and work activities (Thornicroft et al., 2009; Uçok et al., 2012; Lasalvia et al., 2013; Hamilton et al., 2016). This study provides additional evidence that anticipated discrimination prevents engagement in personal/intimate relationships more frequently in people with affective and anxiety disorders than in those with schizophrenia. The very nature of anxiety—anticipation, sensitivity, and general preoccupation with threat—can explain the increased levels of anticipated discrimination reported by people with anxiety disorders.

We also found that nearly three out of four people with affective and anxiety disorders felt the need to conceal their diagnosis, and that concealment of diagnosis was more frequent among people with affective and anxiety disorders than in those with schizophrenia. People with anxiety or depression had a 30% increased likelihood of concealing their diagnosis compared with people with schizophrenia. Since the association remained significant after controlling for the effect of several individual-level factors, this finding can be considered robust. However, this finding is unsurprising, considering that it is generally more difficult to conceal a diagnosis of schizophrenia given the relatively greater impact on a person's life, than one of an affective or anxiety disorder. The dilemma to reveal or conceal a diagnosis is a major treatment issue because nondisclosure of a mental health condition can interfere with help-seeking behaviour, thus creating a major barrier to receiving effective treatment. Concealment also has generally negative effects such as reduced self-esteem, increased psychological distress, and impaired interpersonal relations, whereas disclosure of one's mental illness may have positive effects (Rüsch et al., 2019). Moreover, the decision not to disclose a diagnosis makes it impossible for people with mental health problems to obtain reasonable adjustments in education and employment, thus limiting their employment opportunities and potentially their performance (Brohan et al., 2012). Strategies aimed at supporting people in diagnosis disclosure decisions are available, but have been mostly tested with people with psychosis (Henderson et al., 2013). Our findings

indicate that the concealment issue is also relevant—possibly, even more so—for people with anxiety and affective disorders, and therefore, specific strategies should be developed and tested for those diagnosed with these conditions. In this regard, the peer-led group programme 'Honest, Open, Proud' proved to be effective in supporting adolescents with common mental disorders with disclosure decisions (Mulfinger et al., 2018). Additionally, a recently developed online decision aid tool represents a promising strategy to reduce conflict regarding disclosure decisions for employees with a full range of mental disorders (Stratton et al., 2019).

4.1. Strengths and limitations

This study has several strengths. First, this study did not selectively focus on people with a specific psychiatric condition, but compared levels of discrimination across a wide range of diagnostic groups (schizophrenia, affective disorders, and anxiety disorders). Second, a consistent recruitment and assessment procedure was used for all patients (i.e., one year after index admission and use of the same standardised measures). Third, the participants' range of diagnoses were representative of real-world populations that access generalist mental health services across the EU. Fourth, levels of experienced and anticipated discrimination were evaluated controlling for several clinical and social characteristics—including levels of social integration, severity of illness, and psychiatric co-morbidity—that most research in the field has not considered. Finally, a large sample of more than 2,000 patients recruited from five European countries provided sufficient statistical power for robust findings.

This study has also a number of limitations. First, as patients were recruited from hospital inpatient units, they represent a selected population exhibiting particularly severe clinical conditions; therefore, they may not be representative of people with affective or anxiety disorders, most of which generally receive care at outpatient facilities. In this study, "anxiety disorders" represents a heterogeneous group that encompasses a broad range of different disorders, spanning from stable and long-lasting conditions (such as obsessive-compulsive disorder or phobic disorder) to acute and episodic conditions (such as reaction to severe stress and adjustment disorders), which limits the generalisability of the findings. Additionally, within "anxiety disorders" the specific diagnostic sub-codes were unevenly represented since over half of cases were composed of patients diagnosed with "reaction to severe stress and

adjustment disorders". Second, the generalisability of findings is also limited by the overall COFI recruitment process since, of all eligible patients approached in the participating hospitals during the recruitment period, only 50% agreed to participate. Third, selection bias could not be excluded because this study used data from a sub-sample of participants; however, this bias was minimised because the sub-sample was randomly selected, and background characteristics of patients substantially overlapped with those of the overall COFI sample. Fourth, the cross-sectional design of the study does not provide evidence of causal relationships between putative predictors and levels of discrimination. Fifth, it should be considered that most people diagnosed with an adjustment disorder (that represent half of those included in the anxiety disorder group) might also had depressive symptoms, thus making the distinction between people assigned to F4 and F3 categories somewhat blurred. Sixth, although the potential clustering effect of non-random inclusion of patients in the 57 hospitals is a potential biasing factor, this was taken into account during analyses. Finally, the effect of other important factors, such as socioeconomic status and ethnicity, was not controlled for and might have influenced the results.

5. Conclusion

This study confirms some previous reports of experienced and anticipated discrimination, but also presents the novel finding that discrimination, specifically within the interpersonal/relationship domain, is perceived as more of a burden for people hospitalised with affective or anxiety disorders than those with schizophrenia. This finding may sound somewhat paradoxical since over the last few decades affective and anxiety disorders have gained greater social acceptance (at least in terms of increased rates of help-seeking) and a better public image than schizophrenia. However, the seemingly contrary nature of this finding only highlights the need for additional research involving people with affective and anxiety disorders, with the aim of designing and implementing targeted interventions to reduce stigma in this population.

Contributors

AL and CB conceptualized the article and drafted it with contributions from VL, SP, DG, and EM. The other authors provided data, participated in the analysis, or reviewed the findings (or a combination of these), and contributed to the interpretation. All authors agreed with the final version of the article.

Role of the funding source

The funders had no role in the design of the study, the collection, management, analysis, and interpretation of the data, the preparation, review, or approval of the manuscript, or the decision to submit the manuscript for publication.

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Ethical approval

The authors assert that all procedures involved in this work comply with the ethical standards of the relevant national and institutional committees on human experimentation and with the Helsinki Declaration of 1975, as revised in 2008. Ethical approval was obtained in all the participating countries: (1) England: NRES Committee North East-Newcastle & North Tyneside (ref: 14/NE/1017); (2) Belgium: Comité d'Ethique hospitalo-facultaire des Cliniques St-Luc; (3) Germany: Ethical Board, Technische Universität Dresden; (4) Italy: Comitati Etici per la Sperimentazione Clinica (CESC) delle provincie di Verona, Rovigo, Vicenza, Treviso, Padova; (5) Poland: Komisja Bioetyczna przy Instytucie Psychiatrii i Neurologii w Warszawie.

Author statement

This paper has not been published elsewhere in whole or in part. All authors have read and approved the content, and agree to submit it for consideration for publication in Journal of Affective Disorder. There are no ethical/legal conflicts involved in the article.

Declaration of competing interests

The authors declare that they have no competing interests.

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Table 1. Baseline socio-demographics, social functioning, and clinical characteristics of the participants (n=2181)

Country, n (%)	
-UK (23 hospitals)	734 (33.7%)
-Poland (6 hospitals)	424 (19.4%)
-Germany (5 hospitals)	382 (17.5%)
-Italy (12 hospitals)	370 (17.0%)
-Belgium (9 hospitals)	271 (12.4%)

Socio-demographic variables	
Sex, male, n (%)	1114 (51.2%)
Age, mean (SD)	41.1 (12.4)
Marital status, n (%)	
-single	1143 (52.9%)
-married or cohabiting	610 (28.2%)
-separated/divorced/widowed	408 (18.9%)
Educational level, n (%)	
-primary school	313 (14.5%)
-secondary school	858 (39.7%)
-further education	990 (45.8%)
SIX score, mean (SD)	4.0 (1.4)
Clinical variables	
Primary diagnosis at discharge, n (%)*	
-F2 (Schizophrenia and psychotic disorders)	773 (35.9%)
-F3 (Affective disorders)	1010 (46.9%)
F30 manic episode	*43 (4.3%)*
F31 bipolar disorders	*280 (27.7%)*
F32 major depressive disorder, single episode	*357 (35.3)*
F33 major depressive disorder, recurrent	*264 (26.1%)*
F34 persistent mood disorder	*55 (5.4%)*
F39 unspecified mood disorder	*11 (1.1%)*
-F4 (Anxiety/somatisation disorders)	372 (17.2%)
F40 phobic anxiety disorders	*19 (5.1%)*
F41 other anxiety disorders	

F42 obsessive-compulsive disorders	*54 (14.6%)*
F43 reaction to severe stress and adjustment disorders	*37 (9.9%)*
F44 dissociative and conversion disorders	*201 (54.0%)*
F45 somatoform disorders	*37 (9.9%)*
F48 other neurotic disorders	*18 (4.9%)*
	6 (1.6%)
Psychiatric comorbidity, n (%)	703 (32.2%)
First admission, n (%)	783 (36%)
F2 (Schizophrenia and psychotic disorders)	237 (24%)
F3 (Affective disorders)	383 (38%)
F4 (Anxiety/somatisation disorders)	212 (57%)
Voluntary admission, n (%)	1741 (80%)
Clinical Global Impression, mean (SD)	4.4 (1.1)

Table 2. Experienced and anticipated discrimination in the various DISC-12 items across the three main diagnostic groups

	Schizophrenia (F2; n=773)		**Affective disorders** (F3; n=1010)		**Anxiety disorders** (F4; n=372)		χ^2 **test**	***p***
	Yes, %[§]	**NA %**	**Yes, %[§]**	**NA %**	**Yes, %[§]**	**NA %**		
Experienced discrimination								
Social domain								
Making/keeping friends	30.6	0.9	29.0	1.0	35.2	0.8	4.77	0.092
Dating/intimate relationships	17.6	9.3	18.8	8.6	23.4	9.1	5.11	0.078
Social life	27.9	1.4	24.4	0.8	35.0	0.5	14.99	**0.001**

Employment domain								
Finding a job	22.1	33.9	18.1	37.1	18.5	38.7	3.01	0.222
Keeping a job	17.8	34.2	19.5	30.8	22.3	28.8	2.27	0.321
Housing domain								
Neighbourhood	23.6	1.7	15.1	2.1	16.3	1.6	21.56	**<0.001**
Housing	17.3	15.3	12.8	15.5	15.3	16.7	6.02	**0.049**
Family domain								
Marriage/divorce	14.3	43.6	16.1	39.8	25.3	48.7	11.85	**0.003**
Rel. with family members	30.4	0.8	32.7	1.5	36.0	0.8	3.62	0.164
Starting a family/having children	14.8	42.0	11.0	47.3	11.3	52.2	3.43	0.180
Role as a parent	14.9	39.7	22.8	29.0	17.2	35.2	16.93	**<0.001**
Public services domain								
Public transport	7.9	9.2	4.3	11.3	8.2	13.2	11.15	**0.004**
Welfare benefits	12.9	16.8	13.6	27.5	13.9	39.8	0.22	0.895
Police	14.6	15.4	9.9	17.3	15.0	27.4	9.56	**0.008**
Physical health problems	12.0	2.7	13.7	4.7	19.0	5.1	9.89	**0.007**
Mental health staff	21.7	0.0	16.8	0.7	18.1	0.3	7.23	**0.027**
Privacy	16.7	0.4	15.3	0.6	16.2	1.3	0.64	0.725
Personal safety and security	16.5	2.6	13.9	3.1	16.9	5.1	2.97	0.226
Anticipated discrimination								
Applying for work	35.1	20.3	38.6	25.0	42.2	23.4	4.19	0.123
Applying for education	24.5	25.5	19.9	32.8	24.0	32.0	3.98	0.137
Close personal relationship	35.2	5.7	35.5	6.1	42.9	6.2	6.84	**0.033**
Conceal or hide diagnosis	55.7	0.0	64.3	0.3	68.4	0.0	21.17	**<0.001**

[§] % calculated from valid cases (Yes+No)

Table 3. Unadjusted odds ratios for diagnosis (Three-level univariate random intercept logistic regression models with country and hospital as random effects)

DISC-12 items	Primary diagnosis OR (95% CI), p-value		
	Schizophrenia (F2)	**Affective disorders (F3)**	**Anxiety disorders (F4)**
Social domain			
Making/keeping friends	1	0.98 (0.79-1.22), 0.874	1.20 (0.91-1.58), 0.197
Dating/intimate relationships	1	1.03 (0.79-1.34), 0.832	1.35 (0.97-1.88), 0.074
Social life	1	0.84 (0.67-1.05), 0.122[a]	1.31 (0.99-1.73), 0.058[a]
Employment domain			
Finding a job	1	0.78 (0.58-1.05), 0.103	0.71 (0.47-1.07), 0.104
Keeping a job	1	1.09 (0.80-1.48), 0.660	1.09 (0.74-1.60), 0.677
Housing domain			
Neighbourhood	1	0.62 (0.48-0.80), <0.001	0.65 (0.46-0.90), 0.011
Housing	1	0.77 (0.57-1.03), 0.079	0.76 (0.52-1.12), 0.170
Family domain			
Marriage/divorce	1	1.01 (0.70-1.47), 0.954	1.37 (0.86-2.18), 0.179
Rel. with family members	1	1.09 (0.88-1.35), 0.432	1.14 (0.86-1.50), 0.364
Starting a family/having children	1	0.64 (0.42-0.97), 0.035	0.49 (0.28-0.87), 0.015
Role as a parent	1	1.52 (1.08-2.12), 0.015	1.60 (1.05-2.43), 0.028
Public services domain			
Public transport	1	0.55 (0.36-0.86), 0.008[b]	1.10 (0.66-1.84), 0.706[b]
Welfare benefits	1	1.06 (0.76-1.46), 0.739	1.00 (0.63-1.58), 0.990
Police	1	0.66 (0.47-0.91), 0.013	1.00 (0.66-1.52), 0.994

Physical health problems	1	1.19 (0.88-1.59), 0.258[c]	1.73 (1.21-2.47), 0.003[c]
Mental health staff	1	0.73 (0.57-0.93), 0.013	0.77 (0.56-1.07), 0.120
Privacy	1	0.86 (0.66-1.14), 0.300	0.93 (0.65-1.33), 0.683
Personal safety and security	1	0.83 (0.63-1.10), 0.196	0.93 (0.65-1.34), 0.709
Applying for work	1	1.18 (0.92-1.50), 0.188	1.26 (0.92-1.73), 0.152
Applying for education	1	0.76 (0.57-1.02), 0.069	0.86 (0.59-1.25), 0.431
Close personal relationship	1	1.00 (0.81-1.24), 0.965	1.24 (0.94-1.63), 0.125
Conceal/hide diagnosis	1	1.32 (1.07-1.62), 0.008	1.42 (1.08-1.88), 0.012

[a] F4 vs F3: OR=1.56 (95% CI 1.19-2.04), p-value=0.001

[b] F4 vs F3: OR=2.00 (95% CI 1.17-3.42), p-value=0.012

[c] F4 vs F3: OR=1.46 (95% CI 1.04-2.04), p-value=0.028

Table 4a. Three-level multivariate random intercept logistic regression models with country and hospital as random effects for items pertaining to experienced discrimination in the social domain. Only independent variables associated at p<0.10 in previously estimated three-level univariate random intercept logistic regression models with country and hospital as random effects were introduced. However, primary diagnosis was included in each multivariate model regardless of its statistical significance in the univariate model.

	Making/keeping friends (n=1860)	**Dating/intimate relationships** (n=1825)	**Social life** (n=1859)
FIXED COEFFICIENTS			
Socio-demographics, OR (95%CI), p-value			
Age	0.98 (0.97-0.99), <0.001	0.99 (0.98-0.99), 0.033	0.97 (0.96-0.98), <0.001
Marital status			
Single	1	1	1
Married	0.99 (0.75-1.29), 0.924	0.82 (0.60-1.11), 0.207	1.07 (0.81-1.42), 0.620
Separated/divorced/widowed	1.23 (0.90-1.68), 0.190	0.85 (0.58-1.23), 0.384	1.02 (0.73-1.43), 0.884
Social functioning, OR (95%CI), p-value			
SIX score	0.92 (0.85-1.00), 0.056	..	0.90 (0.82-0.98), 0.018
Clinical variables, OR (95%CI), p-value			
Primary diagnosis			
Schizophrenia (F2)	1	1	1

Affective disorders (F3)	1.09 (0.86-1.40), 0.470	1.10 (0.83-1.46), 0.519	0.91 (0.70-1.18), 0.486[a]
Anxiety disorders (F4)	1.21 (0.88-1.67), 0.233	1.25 (0.87-1.78), 0.223	1.23 (0.88-1.70), 0.225[a]
First admission			
Yes	0.70 (0.56-0.89), 0.003	..	0.71 (0.55-0.90), 0.005
Voluntary admission			
Yes	..	1.36 (0.95-1.94), 0.090	1.43 (1.05-1.96), 0.025
Psychiatric co-morbidity			
Yes	1.29 (1.02-1.63), 0.035	1.26 (0.96-1.64), 0.090	1.32 (1.04-1.69), 0.023
Clinical Global Impression	0.88 (0.80-0.98), 0.024	0.91 (0.81-1.03), 0.151	0.87 (0.77-0.97), 0.016
RANDOM COEFFICIENTS			
Country variance, Estimate (95% CI)	0.10 (0.02-0.54)	0.14 (0.03-0.66)	0.05 (0.00-0.62)
Hospital variance, Estimate (95% CI)	0.05 (0.01-0.20)	0.03 (0.00-0.45)	0.12 (0.04-0.35)
Log likelihood	-1099.99	-864.69	-1034.86
Wald $\chi^2(0)$ test, p-value	50.14 (<0.001)	23.49 (0.003)	76.18 (<0.001)

[a] F4 vs F3: OR=1.36 (95% CI 1.01-1.85), p-value=0.047

Table 4b. Three-level multivariate random intercept logistic regression models with country and hospital as random effects for items pertaining to experienced discrimination in the employment and housing domains. Only independent variables associated at p<0.10 in previously estimated three-level univariate random intercept logistic regression models with country and hospital as random effects were introduced. However, primary diagnosis was included in each multivariate model regardless of its statistical significance in the univariate model.

	EMPLOYMENT DOMAIN		**HOUSING DOMAIN**	
	Finding a job (n=1251)	**Keeping a job** (n=1371)	**Neighbourhood** (n=1893)	**Housing** (n=1633)
FIXED COEFFICIENTS				
Socio-demographics, OR (95%CI), p-value				
Age	0.99 (0.98-1.00), 0.109	..	..	0.98 (0.96-0.99), 0.002
Sex				
Male	1.19 (0.89-1.60), 0.241	..	1.12 (0.87-1.45), 0.368	..
Marital status				
Single	..	..	1	1
Married			0.83 (0.60-1.13), 0.237	0.81 (0.54-1.21), 0.305

Separated/divorced/widowed			0.87 (0.62-1.22), 0.417	1.36 (0.90-2.07), 0.148
Education				
Primary or less	..	..	1	..
Secondary			0.93 (0.64-1.34), 0.695	
Tertiary or further			0.99 (0.68-1.45), 0.961	
Social functioning, OR (95%CI), p-value				
SIX score	0.89 (0.80-0.99), 0.039	1.16 (1.03-1.29), 0.011	0.78 (0.71-0.86), <0.001	0.84 (0.75-0.95), 0.004
Clinical variables, OR (95%CI), p-value				
Primary diagnosis				
Schizophrenia (F2)	1	1	1	1
Affective disorders (F3)	0.92 (0.66-1.27), 0.604	0.93 (0.67-1.29), 0.660	0.81 (0.61-1.07), 0.145	0.87 (0.63-1.22), 0.435
Anxiety disorders (F4)	0.79 (0.51-1.22), 0.291	0.88 (0.59-1.33), 0.545	0.95 (0.65-1.38), 0.790	0.85 (0.55-1.31), 0.464
First admission				
Yes	..	..	0.55 (0.41-0.74), <0.001	0.77 (0.56-1.06), 0.113
Voluntary admission	..		..	..
Yes		1.72 (1.16-2.54), 0.007		
Psychiatric co-morbidity		..	..	..
Yes	1.20 (0.87-1.66), 0.271			
RANDOM COEFFICIENTS				
Country variance, Estimate (95% CI)	0.15 (0.03-0.77)	0.05 (0.00-0.54)	0.15 (0.02-0.95)	0.30 (0.07-1.36)
Hospital variance, Estimate (95% CI)	0.04 (0.00-0.94)	0.19 (0.07-0.51)	0.08 (0.01-0.41)	0.09 (0.01-0.54)
Log likelihood, Estimate (95% CI)	-610.64	-661.80	-852.17	-647.40
Wald $\chi^2(0)$ test, p-value	12.70 (0.048)	13.80 (0.008)	64.16 (<0.001)	30.72 (<0.001)

Table 4c. Three-level multivariate random intercept logistic regression models with country and hospital as random effects for items pertaining to experienced discrimination in the family domain. Only independent variables associated at p<0.10 in previously estimated three-level univariate random intercept logistic regression models with country and hospital as random effects were introduced. However, primary diagnosis was included in each multivariate model regardless of its statistical significance in the univariate model.

	Marriage/divorce (n=1138)	**Family** (n=2089)	**Starting a family** (n=113)	**Role as a parent** (n=1379)
FIXED COEFFICIENTS				
Socio-demographics, OR (95%CI), p-value				

Age	..	0.99 (0.98-0.99), 0.003	0.96 (0.94-0.98), <0.001	..
Sex				
Male	..	0.66 (0.54-0.81), <0.001	..	0.68 (0.51-0.91), 0.011
Marital status				
Single	1	..	1	1
Married	4.20 (2.52-7.01), <0.001		0.88 (0.55-1.40), 0.591	1.25 (0.86-1.80), 0.238
Separated/divorced/widowed	4.29 (2.47-7.44), <0.001		1.11 (0.61-2.04), 0.727	1.35 (0.91-2.00), 0.134
Education				
Primary or less	1	..	..	..
Secondary	1.27 (0.73-2.22), 0.394			
Tertiary or further	1.75 (1.01-3.06), 0.048			
Clinical variables, OR (95%CI), p-value				
Primary diagnosis				
Schizophrenia (F2)	1	1	1	1
Affective disorders (F3)	0.72 (0.48-1.08), 0.110	1.09 (0.87-1.37), 0.456	0.76 (0.49-1.17), 0.209	1.38 (0.98-1.95), 0.067
Anxiety disorders (F4)	0.91 (0.56-1.50), 0.723	1.15 (0.85-1.55), 0.356	0.54 (0.30-0.98), 0.041	1.49 (0.98-2.28), 0.064
First admission				
Yes	..	0.67 (0.54-0.83), <0.001	0.64 (0.41-0.98), 0.040	..
Voluntary admission				
Yes	2.02 (1.20-3.38), 0.008	1.33 (1.01-1.75), 0.043	..	..
Psychiatric co-morbidity				
Yes	..	1.26 (1.01-1.58), 0.045	..	..
Clinical Global Impression	0.85 (0.72-1.00), 0.049	..	..	..
RANDOM COEFFICIENTS				
Country variance, Estimate (95% CI)	0.16 (0.03-0.96)	0.11 (0.02-0.63)	0.44 (0.10-1.84)	0.30 (0.07-1.30)
Hospital variance, Estimate (95% CI)	0.17 (0.04-0.71)	0.19 (0.09-0.39)	0.27 (0.08-0.97)	0.28 (0.12-0.65)
Log likelihood	-461.02	-1248.70	-385.59	-656.76
Wald χ^2 (0) test, p-value	49.68 (<0.001)	42.28 (<0.001)	26.43 (0.002)	16.16 (0.006)

Table 4d. Three-level multivariate random intercept logistic regression models with country and hospital as random effects for items pertaining to experienced discrimination in the public services domain. Only independent variables associated at p<0.10 in previously estimated three-level univariate random intercept logistic regression models with country and hospital as random effects were introduced. However, primary diagnosis was included in each multivariate model regardless of its statistical significance in the univariate model.

	Public transport (n=1663)	**Welfare benefits** (n=1442)	**Police** (n=1560)	**Physical health problems** (n=1874)	**Mental health staff** (n=1943)	**Privacy** (n=1918)	**Safety and security** (n=1801)
FIXED COEFFICIENTS							
Socio-demographics, OR (95%CI), p-value							
Age	..	..	0.99 (0.97-1.00), 0.142	0.98 (0.97-0.99), 0.008	0.98 (0.97-0.99), <0.001	0.98 (0.97-0.99), 0.002	..
Sex							
Male	..	..	1.31 (0.93-1.84), 0.121	0.63 (0.47-0.83), 0.001	..	..	..
Marital status							
Single	1	..	1	..	1	1	1
Married	0.94 (0.54-1.64), 0.824		0.63 (0.40-1.00), 0.050		1.10 (0.80-1.50), 0.567	0.85 (0.60-1.21), 0.378	0.87 (0.62-1.12), 0.431
Separated/divorced/widowed	0.80 (0.43-1.46), 0.464		0.99 (0.61-1.59), 0.953		1.33 (0.93-1.90), 0.115	1.06 (0.71-1.57), 0.772	1.03 (0.72-1.48), 0.876
Education							
Primary or less	1	..	..	..	..	..	..
Secondary	0.61 (0.33-1.12), 0.111						
Tertiary or further	0.66 (0.35-1.23), 0.194						
Social functioning, OR (95%CI), p-value							
SIX score	0.76 (0.64-0.90), 0.002	0.88 (0.78-0.99), 0.042	0.93 (0.82-1.06), 0.277	0.84 (0.77-0.94), 0.002	0.86 (0.78-0.95), 0.003	0.85 (0.76-0.94), 0.003	0.84 (0.75-0.94), 0.002
Clinical variables, OR (95%CI), p-value							
Primary diagnosis							
Schizophrenia (F2)	1	1	1	1	1	1	1
Affective disorders (F3)	0.75 (0.45-1.26), 0.276[a]	1.07 (0.75-1.52), 0.711	1.04 (0.71-1.53), 0.829	1.36 (0.97-1.90), 0.074[b]	0.89 (0.67-1.17), 0.410	1.08 (0.79-1.46), 0.639	0.96 (0.70-1.33), 0.813
Anxiety disorders (F4)	1.48 (0.79-2.77), 0.222[a]	0.97 (0.59-1.61), 0.912	1.68 (1.03-2.73), 0.038	2.04 (1.36-3.07), 0.001[b]	0.94 (0.65-1.35), 0.722	1.00 (0.68-1.49), 0.988	0.93 (0.61-1.41), 0.729
First admission							
Yes	0.85 (0.52-1.39), 0.506	..	0.58 (0.40-0.85), 0.005	0.69 (0.50-0.94), 0.018	0.63 (0.48-0.83), 0.001	..	0.90 (0.67-1.21), 0.483
Voluntary admission	..	..			..	..	..

Yes			0.61 (0.42-0.90), 0.013	1.19 (0.82-1.72), 0.371			
Psychiatric co-morbidity							
Yes	2.25 (1.42-3.55), 0.001	1.21 (0.85-1.72), 0.286	..	..	1.14 (0.87-1.49), 0.340	1.40 (1.06-1.87), 0.019	..
Clinical Global Impression	1.15 (0.93-1.42), 0.198						0.88 (0.77-1.01), 0.077
RANDOM COEFFICIENTS							
Country variance	0.02 (0.00-47.86)	0.09 (0.01-1.35)	0.43 (0.09-2.11)	0.12 (0.02-0.71)	0.09 (0.01-0.66)	0.39 (0.09-1.64)	0.47 (0.11-2.05)
Hospital variance	0.45 (0.154-1.35)	0.18 (0.05-0.68)	0.10 (0.02-0.61)	0.10 (0.02-0.41)	0.13 (0.05-0.39)	0.14 (0.04-0.42)	0.22 (0.08-0.58)
Log likelihood	-342.92	-541.20	-528.83	-714.23	-898.80	-774.41	-719.99
Wald χ^2 (0) test (p-value)	37.84 (<0.001)	5.43 (0.246)	32.17 (<0.001)	38.05 (<0.001)	38.47 (<0.001)	29.89 (<0.001)	17.64 (0.014)

[a] F4 vs F3: OR=1.92 (95% CI 1.03-3.56), p-value=0.040 [b] F4 vs F3: OR=1.50 (95% CI 1.02-2.22), p-value=0.039

Table 4e. Three-level multivariate mixed effect logistic regression models with country (k=5) and hospital (j=55) as random effects for items pertaining to anticipated discrimination in the work/education area and in the close personal relationships and conceal/hide diagnosis items. Only independent variables associated at p<0.10 in previously estimated three-level univariate mixed effect logistic regression models were introduced. However, primary diagnosis was included in each multivariate model regardless its statistical significance in the univariate model.

	Applying for work (n=1458)	**Applying for education** (n=1289)	**Close personal relationships** (n=1811)	**Conceal/hide diagnosis** (n=2063)
FIXED COEFFICIENTS				
Socio-demographics, OR (95%CI), p-value				
Age	0.99 (0.98-0.99), 0.018	0.97 (0.96-0.99), <0.001	0.98 (0.97-0.99), <0.001	0.98 (0.97-0.99), <0.001
Sex				
Male	..	..	..	0.74 (0.61-0.92), 0.003
Marital status	..			
Single		1	1	1
Married		0.83 (0.58-1.21), 0.340	0.66 (0.50-0.87), 0.003	0.80 (0.61-1.01), 0.063
Separated/divorced/widowed		1.26 (0.81-1.02), 0.301	1.34 (0.98-1.82), 0.064	0.93 (0.70-1.24), 0.617

Education				
Primary or less	..	..	..	1
Secondary				1.01 (0.75-1.36), 0.933
Tertiary or further				1.36 (1.01-1.84), 0.045
Social functioning, OR (95%CI), p-value				
SIX score		0.91 (0.81-1.02), 0.108	0.94 (0.87-1.02), 0.168	..
Clinical variables, OR (95%CI), p-value				
Primary diagnosis				
Schizophrenia (F2)	1	1	1	1
Affective disorders (F3)	1.24 (0.96-1.60), 0.098	0.89 (0.64-1.23), 0.469	1.12 (0.88-1.43), 0.344	1.38 (1.10-1.72), 0.005
Anxiety disorders (F4)	1.27 (0.90-1.79), 0.171	0.86 (0.57-1.29), 0.461	1.09 (0.79-1.49), 0.606	1.36 (1.02-1.81), 0.035
First admission				
Yes	0.71 (0.56-0.91), 0.007	..	..	..
Voluntary admission				
Yes	..	1.53 (1.05-2.23), 0.025	1.26 (0.94-1.68), 0.123	..
Psychiatric co-morbidity				
Yes	..	..	1.20 (0.95-1.51), 0.123	..
Clinical Global Impression	0.91 (0.81-1.01), 0.082	..	0.90 (0.81-1.00), 0.060	..
RANDOM COEFFICIENTS				
Country variance, Estimate (95% CI)	0.01 (0.00-8.05)	0.00 (0.00-0.00)	0.07 (0.01-0.48)	0.18 (0.04-0.74)
Hospital variance, Estimate (95% CI)	0.30 (0.14-0.61)	0.34 (0.14-0.81)	0.11 (0.03-0.33)	0.13 (0.06-0.32)
Log likelihood, Estimate (95% CI)	-939.64	-656.75	-1098.89	-1285.58
Wald χ^2 (0) test, p-value	15.87 (0.007)	29.60 (<0.001)	51.62 (<0.001)	49.91 (<0.001)

Figure 1a. Variance partition coefficients (VPCs) for each experienced discrimination item

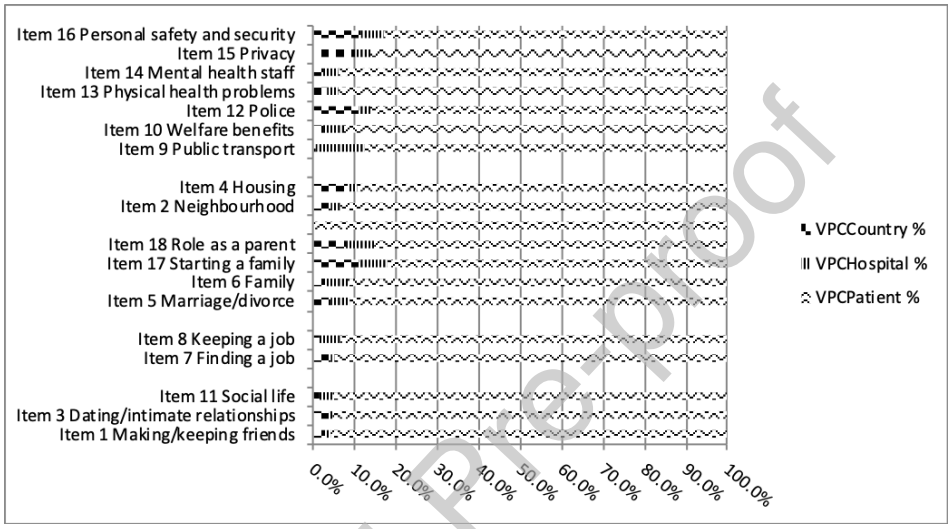

Figure 1b.

Variance partition coefficients (VPCs) for each anticipated discrimination item