

# BMJ Open

## Discrimination in the workplace, reported by people with major depressive disorder: Cross-sectional study in 35 countries.

Journal:	<i>BMJ Open</i>
Manuscript ID	bmjopen-2015-009961
Article Type:	Research
Date Submitted by the Author:	17-Sep-2015
Complete List of Authors:	Brouwers, Evelien; Tilburg University, School of Social & Behavioral Sciences, Tranzo Mathijssen, Jolanda; Tilburg University, School of Social & Behavioral Sciences, Tranzo Van Bortel, Tine; King's College London, Institute of Psychiatry Knifton, Lee; Mental Health Foundation, Wahlbeck, Kristian; National Institute for Health and Welfare, Audenhove, Chantal; Katholieke Universiteit Leuven, LUCAS Kadri, Nadia; Ibn Rushd University, Psychiatric Center Chang, Chih-Cheng; Chi Mei Medical Centre, Department of Psychiatry Goud, Ramakrishna; St John's Medical College Hospital, St John's National Academy of Health Sciences Ballester, Dinarte; Sistema de Saúde Mãe de Deus, Tofoli, Luis Fernando; Universidade Federal do Ceara, Bello, Ricardo; Hospital Universitario de Caracas, Monteiro, Maria Fatima; Associacao para o Estudo e Integracao Psicossocial, Zaeske, Harald; Heinrich-Heine Universitaet, Rheinische Kliniken Dusseldorf Milacic, Ivona; University of Belgrade, Faculty for Special Education and Rehabilitation, Ucok, Alp; Istanbul University, Faculty of Medicine, Department of Psychiatry Bonetto, Chiara; University of Verona, Department of Public Health and Community Medicine, Section of Psychiatry Lasalvia, Antonio; University of Verona, Department of Public Health and Community Medicine, Section of Psychiatry Thornicroft, Graham; Kings College London, Institute of Psychiatry van Weeghel, Jaap; Tilburg University, School of Social & Behavioral Sciences, Tranzo
<b>Primary Subject Heading</b>:	Mental health
Secondary Subject Heading:	Occupational and environmental medicine, Rehabilitation medicine
Keywords:	Adult psychiatry < PSYCHIATRY, Depression & mood disorders < PSYCHIATRY, OCCUPATIONAL & INDUSTRIAL MEDICINE

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60

SCHOLARONE™  
Manuscripts

For peer review only

**Discrimination in the workplace, reported by people with major depressive disorder:****Cross-sectional study in 35 countries.**

Brouwers EPM<sup>1</sup>, Mathijssen J<sup>1</sup>, Van Bortel T<sup>2</sup>, Knifton L.<sup>3</sup>, Wahlbeck K.<sup>4</sup>, Van Audenhove C<sup>5</sup>, Kadri N<sup>6</sup>, Chang Ch<sup>7</sup>, Goud BR<sup>8</sup>, Ballester D<sup>9</sup>, Tófoli LF<sup>10</sup>, Bello R<sup>11</sup>, Jorge-Monteiro MF<sup>12</sup>, Zäske H<sup>13</sup>, Milačić I<sup>14</sup>, Ucok A<sup>15</sup>, Bonetto C<sup>16</sup>, Lasalvia A<sup>16</sup>, Thornicroft G.<sup>2</sup>; Van Weeghel J.<sup>1</sup>; and the ASPEN/INDIGO Study Group\*

1. Tilburg University, department Tranzo, The Netherlands
2. King's College London, Institute of Psychiatry, London, UK
3. Mental Health Foundation, Glasgow, UK
4. National Institute for Health and Welfare, Vasa, Finland
5. Katholieke Universiteit Leuven, Leuven, Belgium
6. Ibn Rushd University Psychiatric Centre, Casablanca, Morocco
7. Chi Mei Medical Centre, Department of Psychiatry, Tainan, Taiwan
8. St John's Medical College Hospital, St John's National Academy of Health Sciences, Bangalore, India
9. Sistema de Saúde Mãe de Deus, Porto Alegre, Brazil
10. Universidade Federal do Ceara, Campus Sobral, Brazil
11. Hospital Universitario de Caracas, Caracas, Venezuela
12. Associacao para o Estudo e Integracao Psicossocial, Lisbon, Portugal
13. Heinrich-Heine Universitat Dusseldorf, Rheinische Kliniken Dusseldorf, Germany
14. Faculty for Special Education and Rehabilitation, Belgrade, Serbia
15. Foundation of Psychiatry Clinic of Medical Faculty of Istanbul, Istanbul, Turkey
16. Department of Public Health and Community Medicine, Section of Psychiatry, University of Verona, Verona, Italy

**Corresponding author:**

Evelien P.M. Brouwers, PhD

Tilburg University, School of Social and Behavioral Sciences, Department Tranzo, The

Netherlands. P.O. Box 90153, 5000 LE Tilburg. Tel: +31 (0)13 4662962

[e.p.m.brouwers@tilburguniversity.edu](mailto:e.p.m.brouwers@tilburguniversity.edu)

## Abstract

### Objective

Whereas employment has shown to be beneficial for people with Major Depressive Disorder (MDD), across different cultures, employers' attitudes have shown to be negative towards workers with MDD. This may form an important barrier to work participation. Today, little is known about how stigma and discrimination affect work participation of workers with MDD, especially from their own perspective. We aimed to assess, in a working age population including respondents with MDD from 35 countries: (1) if people with MDD anticipate and experience discrimination when trying to find or keep paid employment; (2) if participants in high, middle and lower developed countries differ in these respects; and (3) if discrimination experiences are related to actual employment status (i.e. having a paid job or not).

### Method

Participants in this cross-sectional study (N=834) had a diagnosis of MDD in the previous 12 months. They were interviewed using the Discrimination and Stigma Scale (DISC-12). ANOVAS and generalized linear mixed models were used to analyze the data.

### Results

Overall, 62.5% had anticipated and/or experienced discrimination in the work setting. In very high-developed countries almost 60% of respondents had stopped themselves from applying for work, education or training because of anticipated discrimination. Having experienced discrimination was independently related to unemployment.

## Conclusions

Across different countries and cultures, people with MDD very frequently reported discrimination in the work setting. Effective interventions are needed to enhance work participation in people with MDD, focusing simultaneously on decreasing stigma in the work environment and on decreasing self-discrimination by empowering workers with MDD.

Keywords: discrimination, stigma, depression, mental, employment, work, workplace, human development index

## Strengths and limitations

- Depression is the leading cause of disability worldwide, and for this study respondents with major depressive disorder from as many as 35 countries were interviewed.
- This study examines the under-researched yet substantial problem of discrimination as a barrier for work participation of people with MDD.
- Interviews were used to gather direct self-reports rather than hypothetical scenarios or vignettes, which is often done in research on stigma and discrimination
- Limitations are the cross sectional design of the study, and the fact purposive sampling was used to recruit participants, which limits the generalizability of the results.

## Introduction

Employment has many benefits that can contribute to the recovery of people with mental health problems<sup>1,2</sup>. However, in many countries participation and re-integration of people with mental health problems in the workforce is problematic<sup>3,4</sup>. Several factors cause this, some of which are related to the individual, and some to the environment. An important barrier for full occupational participation and successful vocational integration is the stigma that is associated with mental health problems<sup>5</sup>. Stigma is a mark or sign of disgrace usually eliciting negative attitudes to its bearer and can be seen as a problem associated with knowledge (ignorance), attitudes (prejudice) and behavior (discrimination)<sup>6</sup>. Several studies have shown that although some cultural differences may exist<sup>7</sup>, overall employers in many countries commonly express a range of concerns about hiring a potential employee with mental health problems<sup>8-10</sup>. Concerns reported include the belief that people with mental health problems have limited productivity and job performance, especially in tasks requiring cognitive skills<sup>8,11</sup>, that they are unreliable and might pose threats to the safety of other employees, customers or themselves<sup>11</sup>, or behave in a strange and unpredictable manner, and that there is potential for symptom relapse<sup>8</sup>. In addition, the anticipation of discrimination by people with MDD may lead them not to apply for a job, in the expectation of failure or rejection.

Whereas most studies on mental health problems and discrimination in the workplace have focused on severe mental disorders such as schizophrenia, very few have focused on major depressive disorder (MDD)<sup>5</sup>. This is remarkable, as MDD is one of the leading causes of the global burden of disease<sup>12</sup>. It is one of the most prevalent of all causes of disability<sup>13,14</sup> and therefore an important public health problem. Across different

1  
2  
3 countries and cultures stigma and discrimination form an important barrier to work  
4  
5 reintegration, although this topic has hardly been studied. In this context, the aim of this  
6  
7 study was to assess: (1) if people with MDD of working age anticipate and experience  
8  
9 discrimination because of their mental health problems when trying to find or keep paid  
10  
11 employment; (2) if people with MDD of working age from high, middle and lower developed  
12  
13 countries differ in this respect; and (3) if discrimination experiences when trying to find or  
14  
15 keep paid employment are related to present work status (i.e. having a paid job) in working  
16  
17 aged people with MDD.  
18  
19  
20  
21  
22  
23  
24  
25  
26

## 27 **Methods**

### 28 ***Study design***

29  
30 Data were gathered as part of a larger study by the European Commission funded ASPEN  
31  
32 (Anti Stigma Program European Network) study and the INDIGO (International Study of  
33  
34 Discrimination and Stigma for Depression) research network<sup>15</sup>. In a cross-sectional survey,  
35  
36 people with a clinical diagnosis of major depressive disorder were interviewed in 35  
37  
38 countries. The ASPEN countries included Belgium, Bulgaria, England, Finland, France,  
39  
40 Germany, Greece, Hungary, Italy, Lithuania, The Netherlands, Portugal, Romania, Scotland,  
41  
42 Slovakia, Slovenia, Spain and Turkey. The countries participating through the INDIGO  
43  
44 network included Australia, Brazil, Canada, Croatia, Czech Republic, Egypt, India, Japan,  
45  
46 Malaysia, Morocco, Nigeria, Pakistan, Serbia, Sri Lanka, Taiwan, Tunisia and Venezuela.  
47  
48  
49  
50  
51

52 The design of this study was intentionally pragmatic so that as many as possible low-  
53  
54 and middle-income countries could participate using only locally available resources,  
55  
56 because no external funding was available. Participants were recruited through local  
57  
58  
59  
60



1  
2  
3 research staff, who were asked to identify people attending specialist mental health services  
4  
5 (either outpatient or day care in the public and private sectors) in the local area with a  
6  
7 clinical diagnosis of major depressive disorder in the previous 12 months. Each site was  
8  
9 asked to recruit at least 25 participants with MDD. As the present study focused on the  
10  
11 working age population, students (N=72) and retired respondents (N=168) were excluded  
12  
13 from the analyses. Full details of the method have been previously published<sup>15</sup>.  
14  
15  
16  
17  
18  
19

### 20 **Procedure**

21 Data were gathered during face-to-face interviews in 2010, between January 1<sup>st</sup> and  
22  
23 December 31<sup>st</sup>. Inclusion criteria were (1) a clinical diagnosis of major depressive disorder  
24  
25 during the previous 12 months (single episode or recurrent), as based on the DSM-IV criteria;  
26  
27 (2) ability to speak and understand the main local language; and (3) aged 18 years or older.  
28  
29 Individuals who were receiving psychiatric in-patient care during recruitment were excluded.  
30  
31 The study was approved by the appropriate ethical review board at each study site. After  
32  
33 complete description of the study to the subjects, written informed consent was obtained.  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45

### 46 **Measures**

47 Participants were assessed face-to-face by independent researchers not involved in the care  
48  
49 process using the standardized Discrimination and Stigma scale (version 12), a structured  
50  
51 interview for recording the discrimination experienced by an individual with a mental health  
52  
53 problem<sup>16,17</sup>. The DISC-12 interview starts with the statement "Discrimination and stigma  
54  
55 occur when people are treated unfairly because they are seen as being different from others."  
56  
57  
58  
59  
60

1  
2  
3 This interview asks about how participants have been affected by discrimination and stigma  
4 because of mental health problems". The instrument consists of 32 questions, assessing  
5 discrimination in several life domains, such as marriage, parenting, housing, and leisure. For  
6  
7 the present paper, only the items were that referred to discrimination in the work  
8 environment are reported upon. For anticipated discrimination, the items used in this study  
9  
10 were: "Because of how others might respond to your mental health problem, *have you*  
11 *stopped yourself from applying for work?*" and "Because of how others might respond to  
12 your mental health problem, *have you stopped yourself from applying for education and*  
13 *training?*". For experienced discrimination, the items used were "Because of how others  
14 might respond to your mental health problem, have you been treated unfairly *in finding a*  
15 *job?*" and "Because of how others might respond to your mental health problem, *have you*  
16 *been treated unfairly in keeping a job?*". All questions were answered on a 4-point Likert  
17 scale (0= not at all, 1= a little, 2=moderately, and 3= a lot).  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32

33  
34 For the second research question, consistent with the methodology of a previous  
35 ASPEN/INDIGO paper<sup>18</sup>, countries were divided into groups according to the Human  
36 Development Index (HDI). The HDI is a summary measure of human development  
37 established by the United Nations<sup>19</sup>, which measures the average achievements of a country  
38 in three basic dimensions of human development: (a) long and healthy life (operationalized  
39 as life expectancy at birth), (b) access to knowledge, (i.e the mean number of years of  
40 schooling), and (c) standard of living, (i.e. gross national income per capita). As data were  
41 gathered in 2010, the HDI statistic of that year was used. Countries with a very high HDI  
42 score were England, Australia, Finland, Germany, Canada, Italy, Portugal, Belgium, France,  
43 Japan, Greece, The Netherlands, Scotland, Slovakia, Slovenia, Spain, Czech Republic, Taiwan  
44 and Hungary. Countries with a high HDI score were Turkey, Malaysia, Brazil, Serbia, Bulgaria,  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60

1  
2  
3 Venezuela, Tunisia, Lithuania, Romania, and Croatia. As few countries had a low HDI, the  
4  
5 medium low and low HDI group were taken together as one group for the analyses. This  
6  
7 medium/low HDI group included Egypt, India, Morocco, Nigeria, Pakistan, and Sri Lanka.  
8  
9

10 Internalized stigma, one of the independent variables included in the analyses for  
11  
12 the third research question, was measured with the Internalized Stigma of Mental Illness  
13  
14 Scale (ISMI)<sup>20</sup>. Internalized stigma refers to the inner subjective experience of stigma and its  
15  
16 psychological effects resulting from applying negative stereotypes and stigmatizing attitudes  
17  
18 to oneself. The ISMI is a 29-item instrument for self-rated assessment of the subjective  
19  
20 experience of stigma, with higher scores indicating higher internalized stigma. Here, the  
21  
22 total score on the ISMI was used.  
23  
24  
25  
26  
27  
28  
29

### 30 **Statistical analyses**

31  
32 All analyses were performed using SPSS 19. All p values were two-tailed with an accepted  
33  
34 significance level of 0.05. For the first research question, percentages of anticipated and  
35  
36 experienced discrimination were reported per country. For the second research question,  
37  
38 two separate ANOVAS were conducted, the first of which with anticipated discrimination as  
39  
40 the dependent variable and HDI level as the independent variable. A second ANOVA analysis  
41  
42 was conducted with experienced discrimination as the dependent variable and HDI level as  
43  
44 the independent variable. For the first and second research questions, answers to the  
45  
46 questions on anticipated and experienced discrimination were dichotomized into 'No' ("not  
47  
48 at all") and 'Yes' ("a little", "moderately", "a lot"). For the third research question,  
49  
50 multivariable logistic regression analysis was performed, using work status as the  
51  
52 dependent variable, (defined as 0=no paid employment and 1=employed), and ten  
53  
54  
55  
56  
57  
58  
59  
60

1  
2  
3 independent variables, including experienced discrimination. First, univariate analyses were  
4  
5 conducted including the following independent variables that were expected to be related  
6  
7 to job outcome: experienced discrimination, gender, age, ethnicity (i.e. belonging to an  
8  
9 ethnic minority), level of education, marital status, previous psychiatric treatment, age of  
10  
11 first contact with mental health services, internalized stigma (ISMI total score), and HDI.  
12  
13  
14 Second, all variables that showed a significant relationship with the dependent variable on a  
15  
16 univariate level ( $P < 0.05$ ) were included in the multivariable logistic regression analysis.  
17  
18  
19  
20  
21  
22  
23

## 24 Results

25  
26 A total of 834 people with major depressive disorder across 35 different countries were  
27  
28 individually interviewed for this study. About half of all participants were married or  
29  
30 cohabiting, and two thirds of the participants were women. Characteristics of the sample  
31  
32 are shown in Table 1.  
33  
34

35  
36  
37  
38 (Please insert Table 1 about here)  
39  
40  
41  
42

43 As shown in Table 2, for each separate question, about 40-50% of the participants indicated  
44  
45 that discrimination was *not* a problem for them. However, when looking at the 4 items  
46  
47 combined, about two thirds (62.5%) of the total sample reported anticipated and/or  
48  
49 experienced discrimination in the work setting due to their mental health problem. Almost  
50  
51 one third of participants indicated to have stopped themselves from applying for work  
52  
53 because of anticipated discrimination.  
54  
55  
56  
57  
58  
59  
60

1  
2  
3 (Please insert Table 2 about here)  
4  
5  
6  
7

8           Regarding the second research question, significant differences were found between  
9  
10 the groups with different HDI levels. Specifically, participants in countries with a very high  
11  
12 HDI reported significantly more often anticipated ( $X^2 = 26.01$  (df=2),  $p < 0.01$ ) and also  
13  
14 experienced ( $X^2 = 7.25$  (df=2),  $p < 0.05$ ) discrimination than participants in countries with  
15  
16 moderate/low HDI (see Figure 1). As can also be seen from this Figure, in all three groups  
17  
18 the anticipated discrimination scores were higher than the experienced discrimination  
19  
20 scores.  
21  
22  
23  
24  
25  
26  
27  
28

29 (Please insert Figure 1 about here)  
30  
31  
32  
33

34           Concerning the third research question, as can be seen in Table 3, several variables  
35  
36 were not related to work status on a univariate level (i.e. 'belonging to an ethnic minority',  
37  
38 'marital status', 'age of first contact with mental health services' and 'HDI'). Results from the  
39  
40 multilevel logistic regression analysis showed that experienced discrimination was  
41  
42 independently and positively related to unemployment (0.61, 95% CI= 0.43-0.86). Other  
43  
44 variables that were significantly related to unemployment were 'low educational level' (0.48,  
45  
46 95% CI= 0.34-0.69) and 'having ever been admitted to psychiatric treatment' (0.55, 95% CI=  
47  
48 0.38-0.79).  
49  
50  
51  
52  
53  
54

55 (Please insert Table 3 about here)  
56  
57  
58  
59  
60

## Discussion

The results of this study show that as many as 62.5% of participants reported to have anticipated and/or experienced discrimination in the work setting. Anticipated discrimination was reported more often than experienced discrimination. Participants from countries with a very high HDI reported significantly more often anticipated and experienced discrimination, although even in the medium/low HDI group, about one third of participants reported discrimination in the work setting. Regarding the third research question, it was found that experienced discrimination was indeed independently related to unemployment.

These findings show that discrimination in the workplace is a common problem in many countries worldwide. Considering that inpatients were excluded from the study, for the total group of people with MDD these percentages may be even much higher. These findings are consistent with those of a large Australian study on the experiences and perspectives of people with MDD<sup>21</sup>. Here, participants indicated that stigma was a considerable problem, particularly regarding employment. In a similar German study, 81.5% of the 55 participants who had experienced a depressive episode anticipated stigmatization in the occupational setting<sup>22</sup>. These studies from the depressed individual's perspective are in line with results of studies on employers' perspectives. Such studies have shown that employers tend to have negative attitudes towards people with mental health problems<sup>(5-7)</sup>.

An important finding of the present study was that participants anticipated discrimination more often than that they had actually experienced it. In another study, Ucock et al. 8 found that anticipated discrimination was not necessarily associated with experienced discrimination. Similar to our results, Angermeyer et al<sup>5</sup> also found anticipated discrimination to be higher than experienced discrimination, and suggest it could result in

1  
2  
3 the tendency to avoid situations with a high risk of stigma. Corrigan and colleagues  
4 described this “why try” effect as an overarching phenomenon encompassing self-stigma,  
5 followed by low self-esteem and self-efficacy, and a diminished behavior to pursue life  
6 goals<sup>23</sup>. However, not only people with mental ill health themselves anticipate to be  
7 discriminated in the workplace. A recent population-based survey of working adults in  
8 Canada showed that a third of workers would not tell their managers if they experienced  
9 mental health problems, mostly for fear of damaging their careers<sup>24</sup>. Hence, findings from  
10 these studies and this present study underline the clear need for interventions focusing on  
11 the empowerment of people with MDD in the work environment. Peer support plays an  
12 important role in enhancing empowerment and decreasing self-stigma<sup>20</sup> and may be useful  
13 in such programs.  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27

28  
29 Because mental health problems are highly prevalent<sup>13, 25</sup>, but people with these  
30 disorders are often reluctant to disclose their condition<sup>21, 22</sup>, employers often are not aware  
31 of the fact that many of their employees have mental health problems. Although this is a  
32 major impediment for work adaptations, authors of a recent vignette study concluded that  
33 concealment of mental health problems may actually be wise, as employers tended to think  
34 more negatively about a worker with depression than with a physical disorder under the  
35 exact same circumstances<sup>(26)</sup>. Recently, a decision aid for employees on whether or not to  
36 disclose their mental health problems to an employer has been developed<sup>27-28</sup>, that has  
37 shown to effectively reduce decisional conflict in employees with mental health problems<sup>27</sup>.  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60  
61  
62  
63  
64  
65  
66  
67  
68  
69  
70  
71  
72  
73  
74  
75  
76  
77  
78  
79  
80  
81  
82  
83  
84  
85  
86  
87  
88  
89  
90  
91  
92  
93  
94  
95  
96  
97  
98  
99  
100  
101  
102  
103  
104  
105  
106  
107  
108  
109  
110  
111  
112  
113  
114  
115  
116  
117  
118  
119  
120  
121  
122  
123  
124  
125  
126  
127  
128  
129  
130  
131  
132  
133  
134  
135  
136  
137  
138  
139  
140  
141  
142  
143  
144  
145  
146  
147  
148  
149  
150  
151  
152  
153  
154  
155  
156  
157  
158  
159  
160  
161  
162  
163  
164  
165  
166  
167  
168  
169  
170  
171  
172  
173  
174  
175  
176  
177  
178  
179  
180  
181  
182  
183  
184  
185  
186  
187  
188  
189  
190  
191  
192  
193  
194  
195  
196  
197  
198  
199  
200  
201  
202  
203  
204  
205  
206  
207  
208  
209  
210  
211  
212  
213  
214  
215  
216  
217  
218  
219  
220  
221  
222  
223  
224  
225  
226  
227  
228  
229  
230  
231  
232  
233  
234  
235  
236  
237  
238  
239  
240  
241  
242  
243  
244  
245  
246  
247  
248  
249  
250  
251  
252  
253  
254  
255  
256  
257  
258  
259  
260  
261  
262  
263  
264  
265  
266  
267  
268  
269  
270  
271  
272  
273  
274  
275  
276  
277  
278  
279  
280  
281  
282  
283  
284  
285  
286  
287  
288  
289  
290  
291  
292  
293  
294  
295  
296  
297  
298  
299  
300  
301  
302  
303  
304  
305  
306  
307  
308  
309  
310  
311  
312  
313  
314  
315  
316  
317  
318  
319  
320  
321  
322  
323  
324  
325  
326  
327  
328  
329  
330  
331  
332  
333  
334  
335  
336  
337  
338  
339  
340  
341  
342  
343  
344  
345  
346  
347  
348  
349  
350  
351  
352  
353  
354  
355  
356  
357  
358  
359  
360  
361  
362  
363  
364  
365  
366  
367  
368  
369  
370  
371  
372  
373  
374  
375  
376  
377  
378  
379  
380  
381  
382  
383  
384  
385  
386  
387  
388  
389  
390  
391  
392  
393  
394  
395  
396  
397  
398  
399  
400  
401  
402  
403  
404  
405  
406  
407  
408  
409  
410  
411  
412  
413  
414  
415  
416  
417  
418  
419  
420  
421  
422  
423  
424  
425  
426  
427  
428  
429  
430  
431  
432  
433  
434  
435  
436  
437  
438  
439  
440  
441  
442  
443  
444  
445  
446  
447  
448  
449  
450  
451  
452  
453  
454  
455  
456  
457  
458  
459  
460  
461  
462  
463  
464  
465  
466  
467  
468  
469  
470  
471  
472  
473  
474  
475  
476  
477  
478  
479  
480  
481  
482  
483  
484  
485  
486  
487  
488  
489  
490  
491  
492  
493  
494  
495  
496  
497  
498  
499  
500  
501  
502  
503  
504  
505  
506  
507  
508  
509  
510  
511  
512  
513  
514  
515  
516  
517  
518  
519  
520  
521  
522  
523  
524  
525  
526  
527  
528  
529  
530  
531  
532  
533  
534  
535  
536  
537  
538  
539  
540  
541  
542  
543  
544  
545  
546  
547  
548  
549  
550  
551  
552  
553  
554  
555  
556  
557  
558  
559  
560  
561  
562  
563  
564  
565  
566  
567  
568  
569  
570  
571  
572  
573  
574  
575  
576  
577  
578  
579  
580  
581  
582  
583  
584  
585  
586  
587  
588  
589  
590  
591  
592  
593  
594  
595  
596  
597  
598  
599  
600  
601  
602  
603  
604  
605  
606  
607  
608  
609  
610  
611  
612  
613  
614  
615  
616  
617  
618  
619  
620  
621  
622  
623  
624  
625  
626  
627  
628  
629  
630  
631  
632  
633  
634  
635  
636  
637  
638  
639  
640  
641  
642  
643  
644  
645  
646  
647  
648  
649  
650  
651  
652  
653  
654  
655  
656  
657  
658  
659  
660  
661  
662  
663  
664  
665  
666  
667  
668  
669  
670  
671  
672  
673  
674  
675  
676  
677  
678  
679  
680  
681  
682  
683  
684  
685  
686  
687  
688  
689  
690  
691  
692  
693  
694  
695  
696  
697  
698  
699  
700  
701  
702  
703  
704  
705  
706  
707  
708  
709  
710  
711  
712  
713  
714  
715  
716  
717  
718  
719  
720  
721  
722  
723  
724  
725  
726  
727  
728  
729  
730  
731  
732  
733  
734  
735  
736  
737  
738  
739  
740  
741  
742  
743  
744  
745  
746  
747  
748  
749  
750  
751  
752  
753  
754  
755  
756  
757  
758  
759  
760  
761  
762  
763  
764  
765  
766  
767  
768  
769  
770  
771  
772  
773  
774  
775  
776  
777  
778  
779  
780  
781  
782  
783  
784  
785  
786  
787  
788  
789  
790  
791  
792  
793  
794  
795  
796  
797  
798  
799  
800  
801  
802  
803  
804  
805  
806  
807  
808  
809  
810  
811  
812  
813  
814  
815  
816  
817  
818  
819  
820  
821  
822  
823  
824  
825  
826  
827  
828  
829  
830  
831  
832  
833  
834  
835  
836  
837  
838  
839  
840  
841  
842  
843  
844  
845  
846  
847  
848  
849  
850  
851  
852  
853  
854  
855  
856  
857  
858  
859  
860  
861  
862  
863  
864  
865  
866  
867  
868  
869  
870  
871  
872  
873  
874  
875  
876  
877  
878  
879  
880  
881  
882  
883  
884  
885  
886  
887  
888  
889  
890  
891  
892  
893  
894  
895  
896  
897  
898  
899  
900  
901  
902  
903  
904  
905  
906  
907  
908  
909  
910  
911  
912  
913  
914  
915  
916  
917  
918  
919  
920  
921  
922  
923  
924  
925  
926  
927  
928  
929  
930  
931  
932  
933  
934  
935  
936  
937  
938  
939  
940  
941  
942  
943  
944  
945  
946  
947  
948  
949  
950  
951  
952  
953  
954  
955  
956  
957  
958  
959  
960  
961  
962  
963  
964  
965  
966  
967  
968  
969  
970  
971  
972  
973  
974  
975  
976  
977  
978  
979  
980  
981  
982  
983  
984  
985  
986  
987  
988  
989  
990  
991  
992  
993  
994  
995  
996  
997  
998  
999  
1000

1  
2  
3 and that 43% of workers with mental health problems reported a need for work  
4  
5 adjustments<sup>29</sup>.  
6

7  
8 Results of the present study indicated that in very highly developed countries,  
9  
10 significantly higher percentages of discrimination were reported as compared to countries  
11  
12 with a low/medium developmental score (research question 2). These findings differ from  
13  
14 those of an intercultural study on employers' attitudes towards hiring and accommodating a  
15  
16 person with disabilities at work<sup>10</sup>. Here, it was found that Chinese employers were less likely  
17  
18 to endorse hiring people with psychiatric disabilities than employers from the US or Hong  
19  
20 Kong. However, it should be noticed that within one HDI group, many different countries  
21  
22 and cultures are represented which limits generalizability.  
23  
24  
25

26  
27 Whereas the size of the present study, including 35 countries, is a considerable  
28  
29 strength, the number of people interviewed per country was too small to draw any  
30  
31 conclusions at country level. Nevertheless, the results indicated that even in countries with  
32  
33 a medium to low developmental score, about one third of participants reported  
34  
35 discrimination in the work setting. Future research should focus on differences between  
36  
37 countries, and study for instance the effects of legislation. However, legislation will not  
38  
39 entirely solve the problem, as it does not address self-stigma.  
40  
41  
42

43  
44 We also found that experienced discrimination was significantly related to  
45  
46 unemployment (research question 3). These findings are similar to those of a large  
47  
48 household interview survey in six European countries. Specifically, they found that in  
49  
50 participants with a mental health problem, perceived stigma was not only significantly  
51  
52 associated with being unemployed, but also with a decreased quality of life, higher work  
53  
54 and role limitations and higher social limitations<sup>30</sup>. An explanation for the finding that  
55  
56 experienced discrimination was independently related to unemployment is that the social  
57  
58  
59  
60



1  
2  
3 stigma attached to mental health problems amongst employers may hinder them to hire an  
4  
5 employee with MDD<sup>11,26</sup>. Alternatively this finding may be explained by the fact that during  
6  
7 job interviews, applicants with MDD may not get the position because MDD is characterized  
8  
9 by a variety of symptoms that may be disadvantageous during job interviews, such as  
10  
11 markedly diminished interest in activities, impaired ability to think, concentrate or make  
12  
13 decisions, fatigue, increased irritability, and low self-worth<sup>20</sup>. These symptoms may  
14  
15 influence both applicants' verbal and nonverbal behavior, thereby diminishing their chances  
16  
17 of being appointed.  
18  
19  
20  
21

22  
23 When considering the results of this study, several limitations need to be taken into  
24  
25 account. First, apart from the four items on the DISC questionnaire that measured  
26  
27 anticipated and experienced discrimination, little additional information was available on  
28  
29 how participants perceived their work setting and why they felt discriminated. Future  
30  
31 qualitative and longitudinal studies are needed to address this in more detail, focusing on  
32  
33 the role of stakeholders such as supervisors, employers, colleagues and occupational health  
34  
35 professionals. A second limitation is that the design of the study was cross sectional, for  
36  
37 which reason no causality can be assumed. Hence, discrimination may lead to  
38  
39 unemployment, but unemployment may also lead to feelings of being discriminated against.  
40  
41 Third, purposive sampling was used to recruit participants. This limits the generalizability of  
42  
43 the results, as participants do not necessarily represent true prevalent cases in the  
44  
45 community.  
46  
47  
48  
49  
50

51  
52 In conclusion, the results suggest that anticipated and experienced discrimination in  
53  
54 the workplace is a highly common phenomenon in higher as well as in lower developed  
55  
56 countries across the world. The topic of overcoming stigma and discrimination has been  
57  
58  
59  
60

1  
2  
3 under-researched so far<sup>31</sup> but may offer new ways to improve work participation of people  
4  
5 with MDD. In many countries mental health problems such as MDD are associated with high  
6  
7 costs for society, due to unemployment, absences and at work performance deficits<sup>32-34</sup>.  
8  
9

10 Previous studies have called for research addressing workplace environment issues to  
11  
12 improve work participation of people with MDD<sup>32,34</sup>. Stigma and work place discrimination  
13  
14 are such issues and there is a clear need for effective interventions.  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60

**Table 1. Characteristics of the sample (N=834)**

<b>Demographic characteristics</b>	
Age (mean, SD)	42.7 (11.9)
Female gender (%)	66.9
Education (%)	
None, primary (age ≤12), secondary (≤15-16 years), or vocational qualification	43.8
Diploma, degree, or postgraduate qualification	56.2
Marital status (%)	
Married or cohabiting	52.2
Single or non-cohabiting partner	25.9
Widowed, separated, divorced	21.7
Belongs to ethnic minority (%)	8.2
Human Development Index score <sup>1</sup>	
Very high HDI countries	47.0
High HDI countries	28.2
Medium HDI countries	14.0
Low HDI countries	10.8
<b>Mental health characteristics</b>	
Ever admitted for psychiatric care (%)	36
Age first contact with mental health services (mean, SD)	33.6 (11.8)
Internalized stigma total score <sup>2</sup> (mean, SD)	2.4 (0.55)

Work related characteristics	
Employment	
Full-time or part-time	51.2
Volunteer, or working in a sheltered accommodation or at home	13.1
Looking for a job	14.4
Unemployed, not looking for a job <sup>3</sup>	21.3

<sup>1</sup>HDI, United Nations Development Programme <sup>19</sup>

<sup>2</sup>Total score on the Internalized Stigma of Mental Illness scale <sup>20</sup>. Scale ranges from 1-4, higher scores indicating higher internalized stigma.

<sup>3</sup>Combination of 'Would like to work but afraid to loose benefits', 'unable to work', 'choose not to work'.

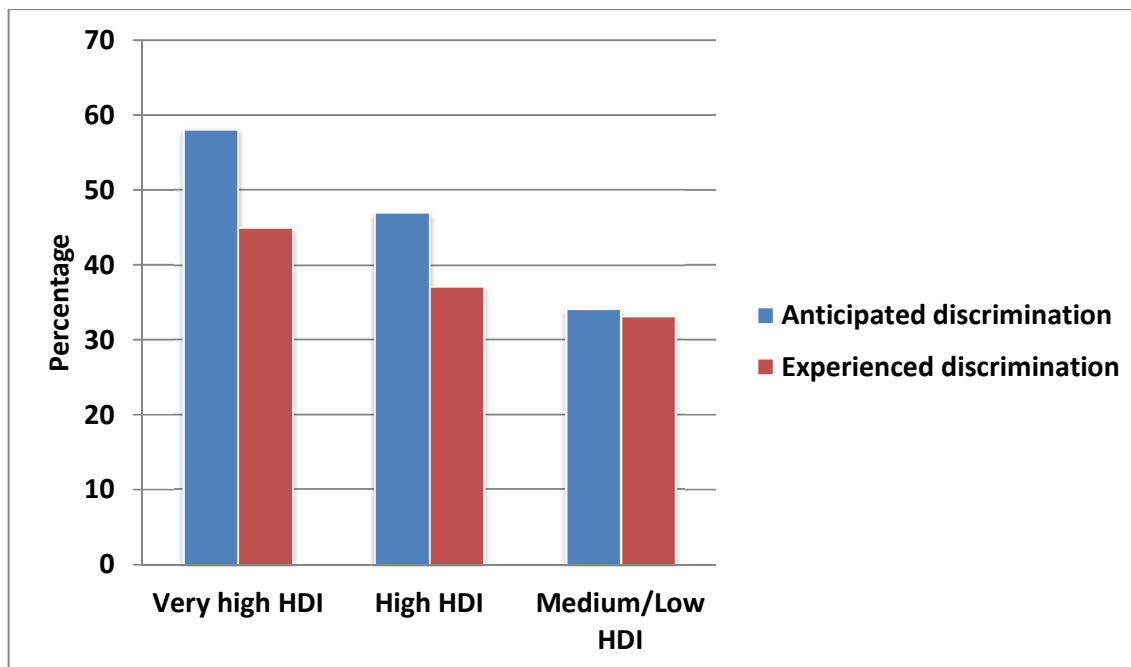
**Table 2. Responses to the DISC-12<sup>1</sup> questions related to employment (N=834)**

	N	(%)
<b>Anticipated discrimination</b>		
...have you stopped yourself from applying for work?		
not at all	338	(40.5)
a little	63	(7.6)
moderately	65	(7.8)
a lot	109	(13.1)
not applicable	239	(28.7)
...have you stopped yourself from applying for education or training courses?		
not at all	373	(44.7)
a little	72	(8.6)
moderately	39	(4.7)
a lot	67	(8.0)
not applicable	262	(31.4)
<b>Experienced discrimination</b>		
... have you been treated unfairly in finding a job?		
not at all	402	(48.2)
a little	41	(4.9)
moderately	35	(4.2)

	a lot	45 (5.4)
	not applicable	307 (36.8)
<i>... have you been treated unfairly in keeping a job?</i>		
	not at all	423 (50.7)
	a little	61 (7.3)
	moderately	57 (6.8)
	a lot	77 (9.2)
	not applicable	213 (25.5)

<sup>1</sup>Discrimination and Stigma Scale. <sup>17</sup>

Figure 1. Percentages of respondents who reported to have anticipated and experienced discrimination in the work setting, in very high, high, moderately and lower developed countries.



Review only

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60

**Table 3. Multivariable logistic regression analysis work status. Dependent variable was work status.**

	Univariable models	Multivariable model
	Odds ratios (95% CI)	Odds ratios (95% CI)
Experienced discrimination	0.63 (0.45-0.88)**	0.61 (0.43-0.86)**
Female gender	0.68 (0.50-0.92)*	0.79 (0.55-1.14)
Age	0.99 (0.97-1.00)*	0.99 (0.98-1.01)
Ethnic minority	0.88 (0.50-1.55)	-
Low level of education	0.44 (0.33-0.59)**	0.48 (0.34-0.69)**
Marital status		
Married or cohabiting	Ref	-
Single or non-cohabiting partner	0.72 (0.50-1.03)	
Widowed, separated, or divorced	0.86 (0.61-1.21)	
Ever admitted for psychiatric treatment	0.61 (0.45-0.84)**	0.55 (0.38-0.79)**
Age first contact with mental health services	1.00 (0.99-1.01)	-
ISMI total	0.66 (0.50-0.86)**	0.72 (0.52-1.00)
HDI		
Low / Medium HDI countries	Ref	-
High HDI countries	1.43 (0.71-2.85)	
Very High HDI countries	1.34 (0.71-2.50)	

\* p<0.05

\*\* p<0.01



Contributorship statement: The original study design and protocol were written by AL, TVB, and GT. AL, TVB, CB, KW, CVA, JVW, IM and GT coordinated data gathering in the participating sites. EB, JvW, JM AL and CB participated in the data analysis and interpretation. The report was written by EB, JVW, JM, TVB GT and was edited by all authors, who also approved of the final version.

Competing interests: none

Funding: This report arises from the project Anti Stigma Programme European Network (ASPEN) which has received funding from the European Union in the framework of the Public Health Programme

Data sharing statement: The data were gathered by a consortium. Additional information can be obtained by contacting dr Tine Van Bortel (PhD) tv250@medschl.cam.ac.uk

## References

1. Eklund M, Hansson L, Ahlqvist C. The importance of work as compared to other forms of daily occupations for wellbeing and functioning among persons with long-term mental illness. *Community Ment Hlt J*. 2004;40(5):465-477.
2. Van der Noordt M, IJzelenberg H, Droomers M, *et al*. Health effects of employment: a systematic review of prospective studies. *Occup Environ Med*. 2014;71:730-736.
3. Gilmour H, Patten SB. Depression and work impairment. *Health Reports*. 2007;18(1):9-22.
4. Henderson M, Madan I, Hotopf M. Work and mental health in the UK. *BMJ*. 2014;348:2256.
5. Angermeyer MC. Important to investigate the dynamics of the stigma process. *Healthcare papers*. 2004;5(2):112-113.
6. Thornicroft G, Rose D, Kassam A, *et al*. Stigma: ignorance, prejudice or discrimination? *Br J Psychiatry*. 2007;190:192-193.
7. Tsang HW, Angell B, Corrigan PW, *et al*. A cross-cultural study of employers' concerns about hiring people with psychotic disorders: Implications for recovery. *Soc Psych Psych Epid*. 2007;42:723-733.
8. Uçok A, Brohan E, Rose D, *et al*. Anticipated discrimination among people with schizophrenia. *Acta Psychiat Scand*. 2012;125(1):77-83.

- 1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60
9. Mangili E, Ponteri M, Buizza C, *et al.* Attitudes toward disabilities and mental illness in work settings: a review. *Epidemiologia e Psichiatria Sociale.* 2004;13(1):29-46.
10. Corrigan PW, Kuwabara S, Tsang HW, *et al.* Disability and work related attitudes in employers from Beijing, Chicago and Hong Kong. *Int J Rehabil Res.* 2008;31(4):347-350.
11. Scheid TL. Stigma as a barrier to employment: Mental disability and the Americans with Disabilities Act. *Int J Law Psychiat.* 2005;28:670-690.
12. Moussavi S, Chatterji S, Verdes E, *et al.* Depression, chronic diseases, and decrements in health: results from the World Health Surveys. *The Lancet.* 2007;370: 851–858.
13. Kessler R, Akiskal HS, Ames M, *et al.* Prevalence and effects of mood disorders on work performance in a nationally representative sample of U.S. workers. *Am J Psychiat.* 2006;163(9):1561-1568.
14. Lopez A, Mathers C, Ezzati M, *et al.* Global and regional burden of disease and risk factors, 2001: systematic analyses of population health data. *The Lancet.* 2006;367(9524):1747-1757.
15. Lasalvia A, Zoppei S, Van Bortel T, *et al.* Global pattern of experienced and anticipated discrimination reported by people with depressive disorder: a cross-sectional survey. *The Lancet.* 2013;381(9860):55-62.
16. Thornicroft G, Brohan E, Rose D, *et al.* Global pattern of anticipated and experienced discrimination against people with schizophrenia: a cross-sectional survey. *The Lancet.* 2009.

- 1  
2  
3 17. Brohan E, Clement S, Rose D, *et al.* Development and psychometric evaluation of the  
4  
5 Discrimination and Stigma Scale (DISC). *Psychiat Res.* 2013;208:33-40.  
6  
7  
8  
9 18. Lasalvia A, Van Bortel T, Bonetto C, *et al.* Cross-national variations in reported  
10  
11 discrimination among people with major depression worldwide: the ASPEN/INDIGO  
12  
13 international study. *Br J Psychiatry.* In press.  
14  
15  
16  
17 19. Programme UND. *Human Development Report 2010.* The Real Wealth of Nations:  
18  
19 Pathways to Human Development 2010.  
20  
21  
22 20. Boyd Ritsher J, Otilingam PG, Grajales M. Internalized stigma of mental illness:  
23  
24 psychometric properties of a new measure. *Psychiat Res.* 2003;121:31-49.  
25  
26  
27  
28 21. McNair B, Highet N, Hickie I, *et al.* Exploring the perspectives of people whose lives  
29  
30 have been affected by depression. *Med J Australia.* 2002;176(20):S69-S76.  
31  
32  
33 22. Angermeyer MC, Beck M, Dietrich S, *et al.* The stigma of mental illness: Patients'  
34  
35 anticipations and experiences. *Int J Soc Psychiatr.* 2004;50(2):153-162.  
36  
37  
38  
39 23. Corrigan PW, Larson J, Ruesch N. Self-Stigma and the "why-try" effect: impact on life  
40  
41 goals and evidence-based practices. *World Psychiatry.* 2009;8(75):75-81.  
42  
43  
44 24. Dewa C. Worker attitudes towards mental health problems and disclosure. *J Occup*  
45  
46 *Environ Med.* 2014;5(4):175-186.  
47  
48  
49  
50 25. De Graaf R, Ten Have M, Van Gool C, *et al.* Prevalence of mental disorders and trends  
51  
52 from 1996 to 2009. Results from the Netherlands Mental Health Survey and Incidence  
53  
54 Study-2. *Soc Psych Psych Epid.* 2012;Feb; 47 (2):203-213.  
55  
56  
57  
58  
59  
60

- 1  
2  
3 26. Mendel R, Kissling W, Reichhart T, *et al.* Managers' reactions towards employees'  
4 disclosure of psychiatric or somatic diagnoses. *Epidemiol Psychiatr Sci.* 2013.  
5  
6  
7  
8  
9 27. Henderson C, Brohan E, Clement S, *et al.* Decision aid on disclosure of mental health  
10 status to an employer: feasibility and outcomes of a randomised controlled trial. *Br J*  
11 *Psychiatry.* 2013;203:350-357.  
12  
13  
14  
15  
16 28. Henderson C, Brohan E, Clement S, *et al.* A decision aid to assist decisions on  
17 disclosure of mental health status to an employer: protocol for the CORAL exploratory  
18 randomised controlled trial. *BMC Psychiatry.* 2012;12(133).  
19  
20  
21  
22  
23  
24 29. Boot CR, Van den Heuvel SG, Bültmann U, *et al.* Work adjustments in a  
25 representative sample of employees with a chronic disease in the Netherlands. *J Occup*  
26 *Rehabil.* 2013;23(2):200-208.  
27  
28  
29  
30  
31  
32 30. Alonso J, Buron A, Rojas-Ferreras S, *et al.* Perceived stigma among individuals with  
33 common mental disorders. *J Affect Disorders.* 2009;118:180-186.  
34  
35  
36  
37  
38 31. Evans-Lacko S, Courtin E, Fiorillo A, *et al.* The state of the art in European research on  
39 reducing social exclusion and stigma related to mental health: a systematic mapping of the  
40 literature. *Eur Psychiatry.* 2014;29(6):381-389.  
41  
42  
43  
44  
45  
46 32. Lerner D, Henke R. What does research tell us about depression, job performance,  
47 and work productivity? *J Occup Environ Med.* 2008;50(4).  
48  
49  
50  
51 33. Smit F, Cuijpers P, Oostenbrink J, *et al.* Costs of nine common mental disorders:  
52 implications for curative and preventive psychiatry. *J Ment Health Policy Econ.*  
53 2006;9(4):193-200.  
54  
55  
56  
57  
58  
59  
60

- 1  
2  
3 34. Lagerveld SE, Bültmann U, Franche RL, *et al.* Factors associated with work  
4 participation and work functioning in depressed workers: a systematic review. *J Occup*  
5 *Rehabil.* 2010;20(3):275-292.  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60

For peer review only

STROBE 2007 (v4) Statement—Checklist of items that should be included in reports of *cross-sectional studies*

Section/Topic	Item #	Recommendation	Reported on page #
Title and abstract	1	(a) Indicate the study's design with a commonly used term in the title or the abstract	1
		(b) Provide in the abstract an informative and balanced summary of what was done and what was found	2
<b>Introduction</b>			
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported	5
Objectives	3	State specific objectives, including any prespecified hypotheses	6
<b>Methods</b>			
Study design	4	Present key elements of study design early in the paper	6
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	6
Participants	6	(a) Give the eligibility criteria, and the sources and methods of selection of participants	7
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	7
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group	7/8
Bias	9	Describe any efforts to address potential sources of bias	14
Study size	10	Explain how the study size was arrived at	7
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	9
Statistical methods	12	(a) Describe all statistical methods, including those used to control for confounding	9
		(b) Describe any methods used to examine subgroups and interactions	9
		(c) Explain how missing data were addressed	7
		(d) If applicable, describe analytical methods taking account of sampling strategy	
		(e) Describe any sensitivity analyses	10
<b>Results</b>			

Participants	13*	(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed	10
		(b) Give reasons for non-participation at each stage	7
		(c) Consider use of a flow diagram	
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders	17
		(b) Indicate number of participants with missing data for each variable of interest	7
Outcome data	15*	Report numbers of outcome events or summary measures	19
Main results	16	(a) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included	7
		(b) Report category boundaries when continuous variables were categorized	7
		(c) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses	11
<b>Discussion</b>			
Key results	18	Summarise key results with reference to study objectives	12
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias	15
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	15
Generalisability	21	Discuss the generalisability (external validity) of the study results	15
<b>Other information</b>			
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based	23

\*Give information separately for cases and controls in case-control studies and, if applicable, for exposed and unexposed groups in cohort and cross-sectional studies.

**Note:** An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at <http://www.plosmedicine.org/>, Annals of Internal Medicine at <http://www.annals.org/>, and Epidemiology at <http://www.epidem.com/>). Information on the STROBE Initiative is available at [www.strobe-statement.org](http://www.strobe-statement.org).



# BMJ Open

## Discrimination in the workplace, reported by people with major depressive disorder: Cross-sectional study in 35 countries.

Journal:	<i>BMJ Open</i>
Manuscript ID	bmjopen-2015-009961.R1
Article Type:	Research
Date Submitted by the Author:	16-Nov-2015
Complete List of Authors:	Brouwers, Evelien; Tilburg University, School of Social & Behavioral Sciences, Tranzo Mathijssen, Jolanda; Tilburg University, School of Social & Behavioral Sciences, Tranzo Van Bortel, Tine; King's College London, Institute of Psychiatry Knifton, Lee; Mental Health Foundation, Wahlbeck, Kristian; National Institute for Health and Welfare, Audenhove, Chantal; Katholieke Universiteit Leuven, LUCAS Kadri, Nadia; Ibn Rushd University, Psychiatric Center Chang, Chih-Cheng; Chi Mei Medical Centre, Department of Psychiatry Goud, Ramakrishna; St John's Medical College Hospital, St John's National Academy of Health Sciences Ballester, Dinarte; Sistema de Saúde Mãe de Deus, Tofoli, Luis Fernando; Universidade Federal do Ceara, Bello, Ricardo; Hospital Universitario de Caracas, Monteiro, Maria Fatima; Associacao para o Estudo e Integracao Psicossocial, Zaeske, Harald; Heinrich-Heine Universitaet, Rheinische Kliniken Dusseldorf Milacic, Ivona; University of Belgrade, Faculty for Special Education and Rehabilitation, Ucok, Alp; Istanbul University, Faculty of Medicine, Department of Psychiatry Bonetto, Chiara; University of Verona, Department of Public Health and Community Medicine, Section of Psychiatry Lasalvia, Antonio; University of Verona, Department of Public Health and Community Medicine, Section of Psychiatry Thornicroft, Graham; Kings College London, Institute of Psychiatry van Weeghel, Jaap; Tilburg University, School of Social & Behavioral Sciences, Tranzo
<b>Primary Subject Heading</b>:	Mental health
Secondary Subject Heading:	Occupational and environmental medicine
Keywords:	Depression & mood disorders < PSYCHIATRY, OCCUPATIONAL & INDUSTRIAL MEDICINE, discrimination, stigma, work, human development index

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60



SCHOLARONE™  
Manuscripts

For peer review only

**Discrimination in the workplace, reported by people with major depressive disorder:****Cross-sectional study in 35 countries.**

Brouwers EPM<sup>1</sup>, Mathijssen J<sup>1</sup>, Van Bortel T<sup>2</sup>, Knifton L.<sup>3</sup>, Wahlbeck K.<sup>4</sup>, Van Audenhove C<sup>5</sup>, Kadri N<sup>6</sup>, Chang Ch<sup>7</sup>, Goud BR<sup>8</sup>, Ballester D<sup>9</sup>, Tófoli LF<sup>10</sup>, Bello R<sup>11</sup>, Jorge-Monteiro MF<sup>12</sup>, Zäske H<sup>13</sup>, Milačić I<sup>14</sup>, Uçok A<sup>15</sup>, Bonetto C<sup>16</sup>, Lasalvia A<sup>16</sup>, Thornicroft G.<sup>2</sup>; Van Weeghel J.<sup>1</sup>; and the ASPEN/INDIGO Study Group\*

1. Tilburg University, department Tranzo, The Netherlands
2. King's College London, Institute of Psychiatry, London, UK
3. Mental Health Foundation, Glasgow, UK
4. National Institute for Health and Welfare, Vasa, Finland
5. Katholieke Universiteit Leuven, Leuven, Belgium
6. Ibn Rushd University Psychiatric Centre, Casablanca, Morocco
7. Chi Mei Medical Centre, Department of Psychiatry, Tainan, Taiwan
8. St John's Medical College Hospital, St John's National Academy of Health Sciences, Bangalore, India
9. Sistema de Saúde Mãe de Deus, Porto Alegre, Brazil
10. Universidade Federal do Ceara, Campus Sobral, Brazil
11. Hospital Universitario de Caracas, Caracas, Venezuela
12. Associacao para o Estudo e Integracao Psicossocial, Lisbon, Portugal
13. Heinrich-Heine Universitat Dusseldorf, Rheinische Kliniken Dusseldorf, Germany
14. Faculty for Special Education and Rehabilitation, Belgrade, Serbia
15. Foundation of Psychiatry Clinic of Medical Faculty of Istanbul, Istanbul, Turkey
16. Department of Public Health and Community Medicine, Section of Psychiatry, University of Verona, Verona, Italy

**Corresponding author:**

Evelien P.M. Brouwers, PhD

Tilburg University, School of Social and Behavioral Sciences, Department Tranzo, The

Netherlands. P.O. Box 90153, 5000 LE Tilburg. Tel: +31 (0)13 4662962

[e.p.m.brouwers@tilburguniversity.edu](mailto:e.p.m.brouwers@tilburguniversity.edu)

**Abstract****Objective**

Whereas employment has shown to be beneficial for people with Major Depressive Disorder (MDD), across different cultures, employers' attitudes have shown to be negative towards workers with MDD. This may form an important barrier to work participation. Today, little is known about how stigma and discrimination affect work participation of workers with MDD, especially from their own perspective. We aimed to assess, in a working age population including respondents with MDD from 35 countries: (1) if people with MDD anticipate and experience discrimination when trying to find or keep paid employment; (2) if participants in high, middle and lower developed countries differ in these respects; and (3) if discrimination experiences are related to actual employment status (i.e. having a paid job or not).

**Method**

Participants in this cross-sectional study (N=834) had a diagnosis of MDD in the previous 12 months. They were interviewed using the Discrimination and Stigma Scale (DISC-12). ANOVAS and generalized linear mixed models were used to analyze the data.

**Results**

Overall, 62.5% had anticipated and/or experienced discrimination in the work setting. In very high-developed countries almost 60% of respondents had stopped themselves from applying for work, education or training because of anticipated discrimination. Having experienced workplace discrimination was independently related to unemployment.

## Conclusions

Across different countries and cultures, people with MDD very frequently reported discrimination in the work setting. Effective interventions are needed to enhance work participation in people with MDD, focusing simultaneously on decreasing stigma in the work environment and on decreasing self-discrimination by empowering workers with MDD.

Keywords: discrimination, stigma, depression, mental, employment, work, workplace, human development index

## Strengths and limitations

- Depression is the leading cause of disability worldwide, and for this study respondents with major depressive disorder from as many as 35 countries were interviewed.
- This study examines the under-researched yet substantial problem of discrimination as a barrier for work participation of people with MDD.
- Interviews were used to gather direct self-reports rather than hypothetical scenarios or vignettes, which is often done in research on stigma and discrimination
- Limitations are the cross sectional design of the study, and the fact purposive sampling was used to recruit participants, which limits the generalizability of the results.

## Introduction

Employment has many benefits that can contribute to the recovery of people with mental health problems<sup>1,2</sup>. However, in many countries participation and re-integration of people with mental health problems in the workforce is problematic<sup>3,4</sup>. Several factors cause this. Some are related to the individual, and some to the environment. An important barrier for full occupational participation and successful vocational integration is the stigma that is associated with mental health problems<sup>5</sup>. Stigma is a mark or sign of disgrace usually eliciting negative attitudes to its bearer and can be seen as a problem associated with knowledge (ignorance), attitudes (prejudice) and behavior (discrimination)<sup>6</sup>. Several studies have shown that although some cultural differences may exist<sup>7</sup>, overall employers in many countries commonly express a range of concerns about hiring a potential employee with mental health problems<sup>8-10</sup>. Concerns reported include the belief that people with mental health problems have limited productivity and job performance, especially in tasks requiring cognitive skills<sup>8,11</sup>, that they are unreliable and might pose threats to the safety of other employees, customers or themselves<sup>11</sup>, or behave in a strange and unpredictable manner, and that there is potential for symptom relapse<sup>8</sup>. In addition, the anticipation of discrimination by people with MDD may lead them not to apply for a job, in the expectation of failure or rejection.

Whereas most studies on mental health problems and discrimination in the workplace have focused on severe mental disorders such as schizophrenia, relatively few have focused on major depressive disorder (MDD)<sup>5</sup>. This is remarkable, as MDD is one of the leading causes of the global burden of disease<sup>12</sup>. It is one of the most prevalent of all causes of disability<sup>13,14</sup> and therefore an important public health problem. Across different

1  
2  
3 countries and cultures stigma and discrimination form an important barrier to work  
4  
5 reintegration, although this topic has hardly been studied. In this context, the aim of this  
6  
7 study was to assess: (1) if people with MDD of working age anticipate and experience  
8  
9 discrimination because of their mental health problems when trying to find or keep paid  
10  
11 employment; (2) if people with MDD of working age from high, middle and lower developed  
12  
13 countries differ in this respect; and (3) if discrimination experiences when trying to find or  
14  
15 keep paid employment are related to present work status (i.e. having a paid job) in working  
16  
17 aged people with MDD.  
18  
19  
20  
21  
22  
23  
24  
25  
26

## 27 **Methods**

### 28 ***Study design***

29  
30 Data were gathered as part of a larger study by the European Commission funded ASPEN  
31  
32 (Anti Stigma Program European Network) study and the INDIGO (International Study of  
33  
34 Discrimination and Stigma for Depression) research network<sup>15</sup>. In a cross-sectional survey,  
35  
36 people with a clinical diagnosis of major depressive disorder were interviewed in 35  
37  
38 countries. The ASPEN countries included Belgium, Bulgaria, England, Finland, France,  
39  
40 Germany, Greece, Hungary, Italy, Lithuania, The Netherlands, Portugal, Romania, Scotland,  
41  
42 Slovakia, Slovenia, Spain and Turkey. The countries participating through the INDIGO  
43  
44 network included Australia, Brazil, Canada, Croatia, Czech Republic, Egypt, India, Japan,  
45  
46 Malaysia, Morocco, Nigeria, Pakistan, Serbia, Sri Lanka, Taiwan, Tunisia and Venezuela.  
47  
48  
49  
50  
51

52 The design of this study was intentionally pragmatic so that as many as possible low-  
53  
54 and middle-income countries could participate using only locally available resources,  
55  
56 because no external funding was available. Participants were recruited through local  
57  
58  
59  
60



1  
2  
3 research staff, who were asked to identify people attending specialist mental health services  
4  
5 (either outpatient or day care in the public and private sectors) in the local area with a  
6  
7 clinical diagnosis of major depressive disorder in the previous 12 months. They were asked  
8  
9 to all apply the DSM-IV criteria in the same, traditional way. Within centers, site directors  
10  
11 were asked to identify a minimum of 25 participants who were, in their judgment,  
12  
13 reasonably representative (as a group) of all people with a diagnosis of MDD attending  
14  
15 specialist mental health services (either outpatient or day-care in both the public and  
16  
17 private sectors in the local area). The minimum number of 25 for each site was defined for  
18  
19 feasibility issues, particularly for non-European sites with no grant support. This method was  
20  
21 intended to allow local staff to take into account the specific local service configuration and  
22  
23 to draw participants from the whole range of appropriate local services. Staff at each site  
24  
25 ensured that the sample had a spread across adult age range [young people (18-25),  
26  
27 working years (25-65), older adults ( $\geq 65$ )] and clear representation of female participants as  
28  
29 MDD is twice as prevalent in women as men. Response rates were unknown. As the present  
30  
31 study focused on the working age population, students (N=72) and retired respondents  
32  
33 (N=168) were excluded from the analyses. Full details of the method have been previously  
34  
35 published<sup>15</sup>.

### 46 **Procedure**

47 Data were gathered during face-to-face interviews in 2010, between January 1<sup>st</sup> and  
48  
49 December 31<sup>st</sup>. Inclusion criteria were (1) a clinical diagnosis of major depressive disorder  
50  
51 during the previous 12 months (single episode or recurrent), as based on the DSM-IV criteria;  
52  
53 (2) ability to speak and understand the main local language; and (3) aged 18 years or older.  
54  
55 Individuals who were receiving psychiatric in-patient care during recruitment were excluded.  
56  
57  
58  
59  
60

1  
2  
3 The study was approved by the appropriate ethical review board at each study site. After  
4  
5 complete description of the study to the subjects, written informed consent was obtained.  
6  
7  
8  
9

### 10 11 12 13 14 **Measures**

15  
16  
17 Participants were assessed face-to-face by independent researchers not involved in the care  
18  
19 process using the standardized Discrimination and Stigma scale (version 12), a structured  
20  
21 interview for recording the discrimination experienced by an individual with a mental health  
22  
23 problem<sup>16, 17</sup>. The DISC-12 interview starts with the statement “Discrimination and stigma  
24  
25 occur when people are treated unfairly because they are seen as being different from others.  
26  
27 This interview asks about how participants have been affected by discrimination and stigma  
28  
29 because of mental health problems”. The instrument consists of 32 questions, assessing  
30  
31 discrimination in several life domains, such as marriage, parenting, housing, and leisure. For  
32  
33 the present paper, only the items were that referred to discrimination in the work  
34  
35 environment are reported upon. For anticipated discrimination, the items used in this study  
36  
37 were: “Because of how others might respond to your mental health problem, *have you*  
38  
39 *stopped yourself from applying for work?*” and “Because of how others might respond to  
40  
41 your mental health problem, *have you stopped yourself from applying for education and*  
42  
43 *training?*”. For experienced discrimination, the items used were “Because of how others  
44  
45 might respond to your mental health problem, have you been treated unfairly *in finding a*  
46  
47 *job?*” and “Because of how others might respond to your mental health problem, *have you*  
48  
49 *been treated unfairly in keeping a job?*”. All questions were answered on a 4-point Likert  
50  
51 scale (0= not at all, 1= a little, 2=moderately, and 3= a lot).  
52  
53  
54  
55  
56  
57  
58  
59  
60

1  
2  
3 For the second research question, consistent with the methodology of a previous  
4 ASPEN/INDIGO paper<sup>18</sup>, countries were divided into groups according to the Human  
5 Development Index (HDI). The HDI is a summary measure of human development  
6 established by the United Nations<sup>19</sup>, which measures the average achievements of a country  
7 in three basic dimensions of human development: (a) long and healthy life (operationalized  
8 as life expectancy at birth), (b) access to knowledge, (i.e the mean number of years of  
9 schooling), and (c) standard of living, (i.e. gross national income per capita). As data were  
10 gathered in 2010, the HDI statistic of that year was used. Countries with a very high HDI  
11 score were England, Australia, Finland, Germany, Canada, Italy, Portugal, Belgium, France,  
12 Japan, Greece, The Netherlands, Scotland, Slovakia, Slovenia, Spain, Czech Republic, Taiwan  
13 and Hungary. Countries with a high HDI score were Turkey, Malaysia, Brazil, Serbia, Bulgaria,  
14 Venezuela, Tunisia, Lithuania, Romania, and Croatia. As few countries had a low HDI, the  
15 medium low and low HDI group were taken together as one group for the analyses. This  
16 medium/low HDI group included Egypt, India, Morocco, Nigeria, Pakistan, and Sri Lanka.

17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60

Internalized stigma, one of the independent variables included in the analyses for the third research question, was measured with the Internalized Stigma of Mental Illness Scale (ISMI)<sup>20</sup>. Internalized stigma refers to the inner subjective experience of stigma and its psychological effects resulting from applying negative stereotypes and stigmatizing attitudes to oneself. The ISMI is a 29-item instrument for self-rated assessment of the subjective experience of stigma, with higher scores indicating higher internalized stigma. Here, the total score on the ISMI was used.

### ***Statistical analyses***

1  
2  
3 All analyses were performed using SPSS 19. All p values were two-tailed with an accepted  
4  
5 significance level of 0.05. For the first research question, percentages of anticipated and  
6  
7 experienced workplace discrimination were reported per country. For the second research  
8  
9 question, two separate ANOVAS were conducted, the first of which with anticipated  
10  
11 workplace discrimination as the dependent variable and HDI level as the independent  
12  
13 variable. A second ANOVA analysis was conducted with experienced workplace  
14  
15 discrimination as the dependent variable and HDI level as the independent variable. For the  
16  
17 first and second research questions, answers to the questions on anticipated and  
18  
19 experienced workplace discrimination were dichotomized into 'No' ("not at all") and 'Yes'  
20  
21 ("a little", "moderately", "a lot"). For the third research question, multivariate logistic  
22  
23 regression analysis was performed, using work status as the dependent variable, (defined as  
24  
25 0=no paid employment and 1=employed), and ten independent variables, including  
26  
27 experienced workplace discrimination. First, univariate analyses were conducted including  
28  
29 the following independent variables that were expected to be related to job outcome:  
30  
31 experienced workplace discrimination, gender, age, ethnicity (i.e. belonging to an ethnic  
32  
33 minority), level of education, marital status, previous psychiatric treatment, age of first  
34  
35 contact with mental health services, internalized stigma (ISMI total score), and HDI. Second,  
36  
37 all variables that showed a significant relationship with the dependent variable on a  
38  
39 univariate level ( $P < 0.05$ ) were included in the multivariable logistic regression analysis.  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54

## 55 Results

56  
57  
58  
59  
60

1  
2  
3 A total of 834 people with major depressive disorder across 35 different countries were  
4  
5 individually interviewed for this study. About half of all participants were married or  
6  
7 cohabiting, and two thirds of the participants were women. Characteristics of the sample  
8  
9 are shown in Table 1. Although there were differences in employment rate across sites, the  
10  
11 employment rates per HDI group did not differ significantly.  
12  
13

14  
15  
16  
17 (Please insert Table 1 about here)  
18  
19

20  
21  
22 As shown in Table 2, for each separate question, about 40-50% of the participants indicated  
23  
24 that discrimination was *not* a problem for them. However, when looking at the 4 items  
25  
26 combined, about two thirds (62.5%) of the total sample reported anticipated and/or  
27  
28 experienced discrimination in the work setting due to their mental health problem. Almost  
29  
30 one third of participants indicated to have stopped themselves from applying for work  
31  
32 because of anticipated discrimination.  
33  
34

35  
36  
37  
38 (Please insert Table 2 about here)  
39  
40  
41  
42

43  
44 Regarding the second research question, significant differences were found between  
45  
46 the groups with different HDI levels. Specifically, participants in countries with a very high  
47  
48 HDI reported significantly more often anticipated ( $X^2 = 26.01$  (df=2),  $p < 0.01$ ) and also  
49  
50 experienced ( $X^2 = 7.25$  (df=2),  $p < 0.05$ ) discrimination than participants in countries with  
51  
52 moderate/low HDI (see Figure 1). As can also be seen from this Figure, in all three groups  
53  
54 the anticipated workplace discrimination scores were higher than the experienced  
55  
56 workplace discrimination scores.  
57  
58  
59  
60

1  
2  
3  
4  
5  
6  
7  
8 (Please insert Figure 1 about here)  
9  
10

11  
12 Concerning the third research question, as can be seen in Table 3, several variables  
13 were not related to work status on a univariate level (i.e. 'belonging to an ethnic minority',  
14 'marital status', 'age of first contact with mental health services' and 'HDI'), for which  
15 reason they were not included in the multivariable model. Results from the multilevel  
16 logistic regression analysis showed that experienced workplace discrimination was  
17 independently and positively related to unemployment (0.61, 95% CI= 0.43-0.86). Other  
18 variables that were significantly related to unemployment were 'low educational level' (0.48,  
19 95% CI= 0.34-0.69) and 'having ever been admitted to psychiatric treatment' (0.55, 95% CI=  
20 0.38-0.79).  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35

36 (Please insert Table 3 about here)  
37  
38  
39

#### 40 **Discussion**

41  
42 The results of this study show that as many as 62.5% of participants reported to have  
43 anticipated and/or experienced discrimination in the work setting. Anticipated workplace  
44 discrimination was reported more often than experienced workplace discrimination.  
45  
46  
47  
48

49 Participants from countries with a very high HDI reported significantly more often  
50 anticipated and experienced workplace discrimination, although even in the medium/low  
51 HDI group, about one third of participants reported discrimination in the work setting.  
52  
53  
54  
55  
56  
57  
58  
59  
60

1  
2  
3 Regarding the third research question, it was found that experienced workplace  
4  
5 discrimination was indeed independently related to unemployment.  
6  
7

8 These findings show that discrimination in the workplace is a common problem in  
9  
10 many countries worldwide. Considering that inpatients were excluded from the study, for  
11  
12 the total group of people with MDD these percentages may be even much higher. These  
13  
14 findings are consistent with those of a recent review<sup>21</sup> and that of a large Australian study  
15  
16 on the experiences and perspectives of people with MDD<sup>22</sup>. Here, participants indicated that  
17  
18 stigma was a considerable problem, particularly regarding employment. In a similar German  
19  
20 study, 81.5% of the 55 participants who had experienced a depressive episode anticipated  
21  
22 stigmatization in the occupational setting<sup>23</sup>. These studies from the depressed individual's  
23  
24 perspective are in line with results of studies on employers' perspectives. Such studies have  
25  
26 shown that employers tend to have negative attitudes towards people with mental health  
27  
28 problems<sup>(5-7)</sup>.  
29  
30  
31  
32

33  
34 An important finding of the present study was that participants anticipated  
35  
36 workplace discrimination more often than that they had actually experienced it. In another  
37  
38 study, Uçok et al.<sup>8</sup> found that anticipated discrimination was not necessarily associated with  
39  
40 experienced discrimination. Similar to our results, Angermeyer et al<sup>5</sup> also found anticipated  
41  
42 discrimination to be higher than experienced discrimination, and suggest it could result in  
43  
44 the tendency to avoid situations with a high risk of stigma. Corrigan and colleagues  
45  
46 described this "why try" effect as an overarching phenomenon encompassing self-stigma,  
47  
48 followed by low self-esteem and self-efficacy, and a diminished behavior to pursue life  
49  
50 goals<sup>24</sup>. However, not only people with mental ill health themselves anticipate to be  
51  
52 discriminated in the workplace. A recent population-based survey of working adults in  
53  
54 Canada showed that a third of workers would not tell their managers if they experienced  
55  
56  
57  
58  
59  
60

1  
2  
3 mental health problems, mostly for fear of damaging their careers<sup>25</sup>. Hence, findings from  
4  
5 these studies and this present study underline the clear need for interventions focusing on  
6  
7 the empowerment of people with MDD in the work environment. Peer support plays an  
8  
9 important role in enhancing empowerment and decreasing self-stigma<sup>20</sup> and may be useful  
10  
11 in such programs.  
12  
13

14  
15 Because mental health problems are highly prevalent<sup>13,26</sup>, but people with these  
16  
17 disorders are often reluctant to disclose their condition<sup>21,22,27,28</sup>, employers often are not  
18  
19 aware of the fact that many of their employees have mental health problems. Although this  
20  
21 is a major impediment for work adaptations, authors of a recent vignette study concluded  
22  
23 that concealment of mental health problems may actually be wise, as employers tended to  
24  
25 think more negatively about a worker with depression than with a physical disorder under  
26  
27 the exact same circumstances<sup>29</sup>. Recently several studies have been conducted on the topic  
28  
29 of disclosure of mental illness in the workplace<sup>21,27,28,30</sup>. For instance, a decision aid for  
30  
31 employees on whether or not to disclose their mental health problems to an employer has  
32  
33 been developed<sup>31-32</sup>, that has shown to effectively reduce decisional conflict in employees  
34  
35 with mental health problems<sup>31</sup>. The findings of the present and other studies<sup>21,25</sup> suggest  
36  
37 that future programs aimed at reducing stigma and discrimination, should also involve  
38  
39 stakeholders from the environment such as employers and occupational health  
40  
41 professionals as they play a major role in for instance whether or not temporary workplace  
42  
43 reasonable adjustments or accommodations are made. Boot et al. showed that workplace  
44  
45 adjustments are associated with a reduction in sick leave duration and that 43% of workers  
46  
47 with mental health problems reported a need for work adjustments<sup>33</sup>.  
48  
49  
50  
51  
52  
53  
54

55 Results of the present study indicated that in very highly developed countries,  
56  
57 significantly higher percentages of workplace discrimination were reported as compared to  
58  
59  
60



1  
2  
3 countries with a low/medium developmental score (research question 2). These findings  
4  
5 differ from those of an intercultural study on employers' attitudes towards hiring and  
6  
7 accommodating a person with disabilities at work<sup>10</sup>. Here, it was found that Chinese  
8  
9 employers were less likely to endorse hiring people with psychiatric disabilities than  
10  
11 employers from the US or Hong Kong. However, it should be noticed that within one HDI  
12  
13 group, many different countries and cultures are represented which limits generalizability.  
14  
15

16  
17 Whereas the size of the present study, including 35 countries, is a considerable  
18  
19 strength, the number of people interviewed per country was too small to draw any  
20  
21 conclusions at country level. Nevertheless, the results indicated that even in countries with  
22  
23 a medium to low developmental score, about one third of participants reported  
24  
25 discrimination in the work setting. Future research should focus on differences between  
26  
27 countries, and study for instance the effects of legislation. However, legislation will not  
28  
29 entirely solve the problem, as legislation does not address self-stigma, and also in countries  
30  
31 with more advanced equality legislation experienced workplace discrimination rates were  
32  
33 still high.  
34  
35  
36  
37

38  
39 We also found that experienced workplace discrimination was significantly related to  
40  
41 unemployment (research question 3). These findings are similar to those of a large  
42  
43 household interview survey in six European countries. Specifically, they found that in  
44  
45 participants with a mental health problem, perceived stigma was not only significantly  
46  
47 associated with being unemployed, but also with a decreased quality of life, higher work  
48  
49 and role limitations and higher social limitations<sup>34</sup>. An explanation for the finding that  
50  
51 experienced workplace discrimination was independently related to unemployment is that  
52  
53 the social stigma attached to mental health problems amongst employers may hinder them  
54  
55 to hire an employee with MDD<sup>11,29</sup>. Alternatively this finding may be explained by the fact  
56  
57  
58  
59  
60

1  
2  
3 that during job interviews, applicants with MDD may not get the position because MDD is  
4  
5 characterized by a variety of symptoms that may be disadvantageous during job interviews,  
6  
7 such as markedly diminished interest in activities, impaired ability to think, concentrate or  
8  
9 make decisions, fatigue, increased irritability, and low self-worth<sup>20</sup>. These symptoms may  
10  
11 influence both applicants' verbal and nonverbal behavior, thereby diminishing their chances  
12  
13 of being appointed.  
14  
15

16  
17  
18 When considering the results of this study, several limitations need to be taken into  
19  
20 account. First, apart from the four items on the DISC questionnaire that measured  
21  
22 anticipated and experienced workplace discrimination, little additional information was  
23  
24 available on how participants perceived their work setting and why they felt discriminated.  
25  
26 Future qualitative and longitudinal studies are needed to address this in more detail,  
27  
28 focusing on the role of stakeholders such as supervisors, employers, colleagues and  
29  
30 occupational health professionals. A second limitation is that the design of the study was  
31  
32 cross sectional, for which reason no causality can be assumed. Hence, workplace  
33  
34 discrimination may lead to unemployment, but unemployment may also lead to feelings of  
35  
36 being discriminated against. Third, purposive sampling was used to recruit participants. This  
37  
38 limits the generalizability of the results, as participants do not necessarily represent true  
39  
40 prevalent cases in the community.  
41  
42  
43  
44  
45  
46  
47

48 In conclusion, the results suggest that anticipated and experienced discrimination in  
49  
50 the workplace is a highly common phenomenon in higher as well as in lower developed  
51  
52 countries across the world. The topic of overcoming stigma and discrimination has been  
53  
54 under-researched so far<sup>35</sup> but may offer new ways to improve work participation of people  
55  
56 with MDD. In many countries mental health problems such as MDD are associated with high  
57  
58  
59  
60

1  
2  
3 costs for society, due to unemployment, absences and at work performance deficits <sup>36-38</sup>.  
4

5 Previous studies have called for research addressing workplace environment issues to  
6  
7 improve work participation of people with MDD <sup>36,38</sup>. Stigma and workplace discrimination  
8  
9 are such issues and there is a clear need for effective interventions.  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53

54 **Table 1. Characteristics of the sample (N=834)**  
55  
56  
57  
58  
59  
60

<b>Demographic characteristics</b>	
Age (mean, SD)	42.7 (11.9)
Female gender (%)	66.9
Education (%)	
None, primary (age ≤12), secondary (≤15-16 years), or vocational qualification	43.8
Diploma, degree, or postgraduate qualification	56.2
Marital status (%)	
Married or cohabiting	52.2
Single or non-cohabiting partner	25.9
Widowed, separated, divorced	21.7
Belongs to ethnic minority (%)	8.2
Human Development Index score <sup>1</sup>	
Very high HDI countries	47.0
High HDI countries	28.2
Medium HDI countries	14.0
Low HDI countries	10.8
<b>Mental health characteristics</b>	
Ever admitted for psychiatric care (%)	36
Age first contact with mental health services (mean, SD)	33.6 (11.8)
Internalized stigma total score <sup>2</sup> (mean, SD)	2.4 (0.55)
<b>Work related characteristics</b>	

Employment	
Full-time or part-time	51.2
Volunteer, or working in a sheltered accommodation or at home	13.1
Looking for a job	14.4
Unemployed, not looking for a job <sup>3</sup>	21.3

<sup>1</sup>HDI, United Nations Development Programme<sup>19</sup>

<sup>2</sup>Total score on the Internalized Stigma of Mental Illness scale<sup>20</sup>. Scale ranges from 1-4, higher scores indicating higher internalized stigma.

<sup>3</sup>Combination of 'Would like to work but afraid to lose benefits', 'unable to work', 'choose not to work'.

**Table 2. Responses to the DISC-12<sup>1</sup> questions related to employment (N=834)**

	N	(%)
<b>Anticipated discrimination</b>		
...have you stopped yourself from applying for work?		
not at all	338	(40.5)
a little	63	(7.6)
moderately	65	(7.8)
a lot	109	(13.1)
not applicable	239	(28.7)
...have you stopped yourself from applying for education or training courses?		
not at all	373	(44.7)
a little	72	(8.6)
moderately	39	(4.7)
a lot	67	(8.0)
not applicable	262	(31.4)
<b>Experienced discrimination</b>		
... have you been treated unfairly in finding a job?		
not at all	402	(48.2)
a little	41	(4.9)
moderately	35	(4.2)

	a lot	45 (5.4)
	not applicable	307 (36.8)
<i>... have you been treated unfairly in keeping a job?</i>		
	not at all	423 (50.7)
	a little	61 (7.3)
	moderately	57 (6.8)
	a lot	77 (9.2)
	not applicable	213 (25.5)

<sup>1</sup>Discrimination and Stigma Scale. <sup>17</sup>

**Figure 1. Percentages and 95% Confidence Intervals of respondents who reported to have anticipated and experienced discrimination in the work setting, in very high, high, moderately and lower developed countries.**

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60

For peer review only

**Table 3. Multivariable logistic regression analysis work status. Dependent variable was work status, defined as working fulltime or parttime versus all other groups (looking for a job, not looking for a job, volunteer work).**

	Univariable models	Multivariable model
--	--------------------	---------------------



	Odds ratios (95% CI)	Odds ratios (95% CI)
Experienced discrimination		
No	Ref	Ref
Yes	0.63 (0.45-0.88)**	0.61 (0.43-0.86)**
Sex		
Male	Ref	Ref
Female	0.68 (0.50-0.92)*	0.79 (0.55-1.14)
Age	0.99 (0.97-1.00)*	0.99 (0.98-1.01)
Belongs to ethnic minority		-
No	Ref	
Yes	0.88 (0.50-1.55)	
Education		
Diploma, degree, or postgraduate qualification	Ref	Ref
None, primary (age ≤12), secondary (≤15-16 years), or vocational qualification	0.44 (0.33-0.59)**	0.48 (0.34-0.69)**
Marital status		-
Married or cohabiting	Ref	
Single or non-cohabiting partner	0.72 (0.50-1.03)	
Widowed, separated, or divorced	0.86 (0.61-1.21)	
Ever admitted for psychiatric treatment		
No	Ref	Ref

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60

Yes	0.61 (0.45-0.84)**	0.55 (0.38-0.79)**
Age first contact with mental health services	1.00 (0.99-1.01)	-
ISMI total	0.66 (0.50-0.86)**	0.72 (0.52-1.00)
HDI		
Low / Medium HDI countries	Ref	-
High HDI countries	1.43 (0.71-2.85)	
Very High HDI countries	1.34 (0.71-2.50)	

\* p<0.05

\*\* p<0.01

Contributorship statement: The original study design and protocol were written by AL, TVB, and GT. AL, TVB, CB, KW, CVA, JVW, IM and GT coordinated data gathering in the participating sites. EB, JvW, JM AL and CB participated in the data analysis and interpretation. The report was written by EB, JVW, JM, TVB GT and was edited by all authors, who also approved of the final version.

Competing interests: No, there are no competing interests.

Funding: This report arises from the project Anti Stigma Programme European Network (ASPEN) which has received funding from the European Union in the framework of the Public Health Programme

Data sharing statement: No additional data available.

Acknowledgement:

The ASPEN/INDIGO staff at coordinating centres: Graham Thornicroft, Tine Van Bortel, Samantha Treacy, Elaine Brohan, Shuntaro Ando, Diana Rose (King's College London, Institute of Psychiatry, London, England); Kristian Wahlbeck, Esa Aromaa, Johanna Nordmyr, Fredrica Nyqvist, Carolina Herberts (National Institute for Health and Welfare, Vasa, Finland); Oliver Lewis, Jasna Russo, Dorottya Karsay, Rea Maglajlic (Mental Disability Advocacy Centre, Budapest, Hungary); Antonio Lasalvia, Silvia Zoppei, Doriana Cristofalo, Chiara Bonetto (Department of Public Health and Community Medicine, Section of Psychiatry, University of Verona, Italy); Isabella Goldie, Lee Knifton, Neil Quinn (Mental Health Foundation, Glasgow,

Scotland); Norman Sartorius (Association for the improvement of mental health programmes (AMH), Geneva, Switzerland).

The ASPEN/INDIGO staff at partner centres: Chantal Van Audenhove, Gert Scheerder, Else Tambuyzer (Katholieke Universiteit Leuven, Belgium); Valentina Hristakeva, Dimitar Germanov (Global Initiative on Psychiatry Sofia, Bulgaria); Jean Luc Roelandt, Simon Vasseur Bacle, Nicolas Daumerie, Aude Caria (Etablissement Public Santé Mentale Lille-Métropole (EPSM/CCOMS), France); Harald Zaska, Wolfgang Gaebel (Heinrich-Heine Universität Düsseldorf, Rheinische Kliniken Düsseldorf, Germany); Marina Economou, Eleni Louki, Lily Peppou, Klio Geroulanou (University Mental Health Institute (UMHRI) (EIPSI), Greece); Judit Harangozo, Julia Sebes, Gabor Csukly (Awakenings Foundation, Hungary); Giuseppe Rossi, Mariangela Lanfredi, Laura Pedrini (IRCCS Istituto Centro San Giovanni di Dio Fatebenefratelli, Brescia, Italy); Arunas Germanavicius, Natalja Markovskaja, Vytis Valantinas (Vilnius University, Lithuania); Jaap van Weeghel, Jenny Boumans, Eleonor Willemsen, Annette Plooy (Stichting Kenniscentrum Phrenos (KcP), The Netherlands); Teresa Duarte, Fatima Jorge Monteiro (Associação para o Estudo e Integração Psicossocial, Portugal); Radu Teodorescu, Iuliana Radu, Elena Pana (Asociația din România de Psihiatrie Comunitară, România); Janka Hurova, Dita Leczova (Association for Mental Health INTEGRA, o. z., Slovakia); Vesna Svab, Nina Konecnik (University Psychiatric Hospital, Slovenia); Blanca Reneses, Juan J Lopez-Ibor, Nerea Palomares, Camila Bayon (Instituto de Psiquiatria at the Hospital Universitario San Carlos, Spain); Alp Uçok, Gulsah Karaday (Foundation of Psychiatry Clinic of Medical Faculty of Istanbul (PAP), Turkey); Nicholas Glozier, Nicole Cockayne (Brain & Mind Research Institute, Sydney Medical School, University of Sydney, Australia); Luís Fernando Tófoli, Maria Suely Alves Costa (Universidade Federal do Ceará, Campus Sobral, Brazil); Roumen Milev, Teresa Garrah, Liane Tackaberry, Heather Stuart (Department of Psychiatry, Queen's University, Canada/Providence Care, Mental Health Services, Kingston, Ontario, Canada); Branka Aukst Margetic, Petra Folnegovic Groiž (Department of Psychiatry, University Hospital Centre ZagrebMiro Jakovljević, Croatia); Barbora Wenigová, elepová Pavla (Centre for Mental Health Care Development, Prague, Czech Republic); Doaa Nader Radwan (Institute of Psychiatry, Ain Shams University, Cairo, Egypt); Pradeep Johnson, Ramakrishna Goud, Nandesh, Geetha Jayaram (St. John's Medical College Hospital, St John's National Academy of Health Sciences, Bangalore, India); Shuntaro Ando (Social Psychiatry, Tokyo Metropolitan Institute of Medical Science, Tokyo, Japan); Yuriko Suzuki, Tsuyoshi Akiyama, Asami Matsunaga, Peter Bernick (NTT Kanto Hospital, Japan); Bawo James (Federal Neuropsychiatric Hospital, USELU, Benin City, Nigeria); Bolanle Ola, Olugbenga Owoeye (Federal Neuropsychiatric Hospital Yaba, Lagos, Nigeria); Yewande Oshodi (Department of Psychiatry, College of Medicine University of Lagos and Lagos University Teaching Hospital, Lagos, Nigeria); Jibril Abdulmalik (Federal Neuropsychiatric Hospital, Maiduguri, Nigeria); Kok-Yoon Chee, Norhayati Ali (Kuala Lumpur Hospital and Selayang Hospital, Malaysia); Nadia Kadri, Dounia Belghazi, Yassine Anwar (Ibn Rushd University Psychiatric Centre, Casablanca, Morocco); Nashi Khan, Rukhsana Kausar

1  
2  
3 (University of the Punjab, Department of Applied Psychology and Centre for Clinical  
4 Psychology, Lahore, Pakistan); Ivona Milacic Vidojevic (Faculty for Special Education and  
5 Rehabilitation, Belgrade, Serbia); Athula Sumathipala (Institute of Psychiatry, King's College  
6 London/Institute for Research and Development, Sri Lanka); Chih-Cheng Chang (Chi Mei  
7 Medical Centre, Department of Psychiatry, Tainan), Taiwan; Fethi Nacef, Uta Ouali, Hayet  
8 Ouertani, Rabaa Jomli, Abdelhafidh Ouertani, Khadija Kaaniche (Razi Hospital Manouba,  
9 Department of Psychiatry, Tunis, Tunisia); Ricardo Bello, Manuel Ortega, Arturo Melone,  
10 María Andreína Marques, Francisco Marco, Arturo Ríos, Ernesto Rodríguez, Arianna  
11 Laguado (Hospital Universitario de Caracas, Caracas, Venezuela). GT is supported by the  
12 National Institute for Health Research (NIHR) Collaboration for Leadership in Applied Health  
13 Research and Care South London at King's College London Foundation Trust. The views  
14 expressed are those of the author(s) and not necessarily those of the NHS, the NIHR or the  
15 Department of Health. GT acknowledges financial support from the Department of Health  
16 via the National Institute for Health Research (NIHR) Biomedical Research Centre and  
17 Dementia Unit awarded to South London and Maudsley NHS Foundation Trust in  
18 partnership with King's College London and King's College Hospital NHS Foundation Trust.  
19 GT is supported by the European Union Seventh Framework Programme (FP7/2007-2013)  
20 Emerald project.  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60

## References

1. Eklund M, Hansson L, Ahlqvist C. The importance of work as compared to other forms of daily occupations for wellbeing and functioning among persons with long-term mental illness. *Community Ment Hlt J*. 2004;40(5):465-477.
2. Van der Noordt M, IJzelenberg H, Droomers M, *et al*. Health effects of employment: a systematic review of prospective studies. *Occup Environ Med*. 2014;71:730-736.
3. Gilmour H, Patten SB. Depression and work impairment. *Health Reports*. 2007;18(1):9-22.
4. Henderson M, Madan I, Hotopf M. Work and mental health in the UK. *BMJ*. 2014;348:2256.
5. Angermeyer MC. Important to investigate the dynamics of the stigma process. *Healthcare papers*. 2004;5(2):112-113.
6. Thornicroft G, Rose D, Kassam A, *et al*. Stigma: ignorance, prejudice or discrimination? *Br J Psychiatry*. 2007;190:192-193.
7. Tsang HW, Angell B, Corrigan PW, *et al*. A cross-cultural study of employers' concerns about hiring people with psychotic disorders: Implications for recovery. *Soc Psych Psych Epid*. 2007;42:723-733.
8. Uçok A, Brohan E, Rose D, *et al*. Anticipated discrimination among people with schizophrenia. *Acta Psychiat Scand*. 2012;125(1):77-83.

- 1  
2  
3 9. Mangili E, Ponteri M, Buizza C, *et al.* Attitudes toward disabilities and mental illness  
4 in work settings: a review. *Epidemiologia e Psichiatria Sociale.* 2004;13(1):29-46.  
5  
6  
7  
8  
9 10. Corrigan PW, Kuwabara S, Tsang HW, *et al.* Disability and work related attitudes in  
10 employers from Beijing, Chicago and Hong Kong. *Int J Rehabil Res.* 2008;31(4):347-350.  
11  
12  
13 11. Scheid TL. Stigma as a barrier to employment: Mental disability and the Americans  
14 with Disabilities Act. *Int J Law Psychiat.* 2005;28:670-690.  
15  
16  
17  
18  
19 12. Moussavi S, Chatterji S, Verdes E, *et al.* Depression, chronic diseases, and  
20 decrements in health: results from the World Health Surveys. *The Lancet.* 2007;370: 851–  
21 858.  
22  
23  
24  
25  
26  
27 13. Kessler R, Akiskal HS, Ames M, *et al.* Prevalence and effects of mood disorders on  
28 work performance in a nationally representative sample of U.S. workers. *Am J Psychiat.*  
29 2006;163(9):1561-1568.  
30  
31  
32  
33  
34  
35 14. Lopez A, Mathers C, Ezzati M, *et al.* Global and regional burden of disease and risk  
36 factors, 2001: systematic analyses of population health data. *The Lancet.*  
37 2006;367(9524):1747-1757.  
38  
39  
40  
41  
42  
43 15. Lasalvia A, Zoppei S, Van Bortel T, *et al.* Global pattern of experienced and  
44 anticipated discrimination reported by people with depressive disorder: a cross-sectional  
45 survey. *The Lancet.* 2013;381(9860):55-62.  
46  
47  
48  
49  
50  
51 16. Thornicroft G, Brohan E, Rose D, *et al.* Global pattern of anticipated and experienced  
52 discrimination against people with schizophrenia: a cross-sectional survey. *The Lancet.* 2009.  
53  
54  
55  
56  
57  
58  
59  
60

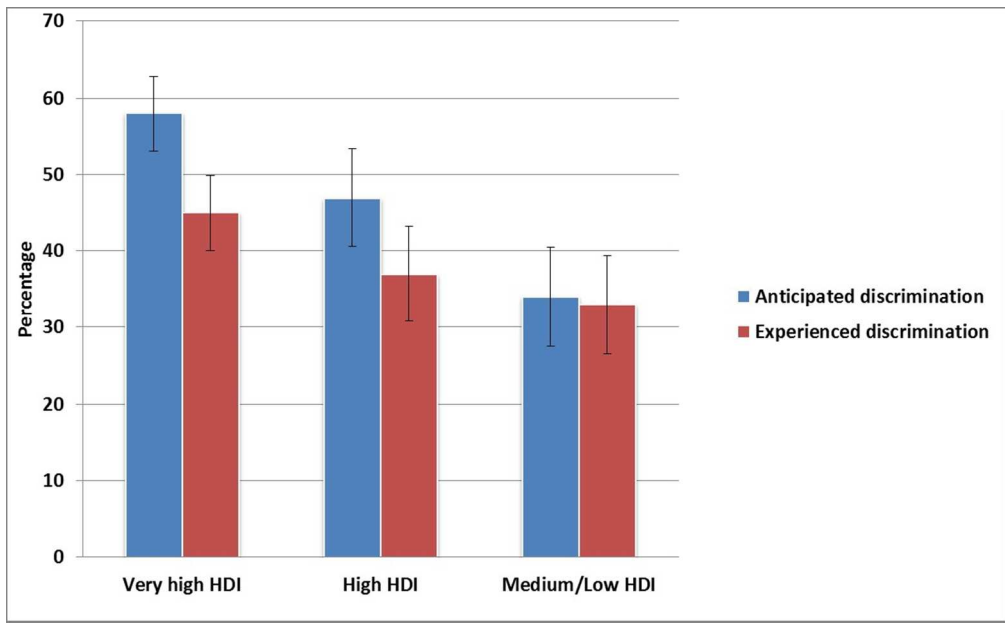
- 1  
2  
3 17. Brohan E, Clement S, Rose D, *et al.* Development and psychometric evaluation of the  
4  
5 Discrimination and Stigma Scale (DISC). *Psychiat Res.* 2013;208:33-40.  
6  
7  
8  
9 18. Lasalvia A, Van Bortel T, Bonetto C, *et al.* Cross-national variations in reported  
10  
11 discrimination among people with major depression worldwide: the ASPEN/INDIGO  
12  
13 international study. *Br J Psychiatry.* 2015 Sep 17. pii: bjp.bp.114.156992.  
14  
15  
16 19. United Nations Development Programme (UNDP). *Human Development Report 2010.*  
17  
18 The Wealth of Nations: Pathways to Human Development. UNDP, 2010.  
19  
20  
21  
22 20. Boyd Ritsher J, Otilingam PG, Grajales M. Internalized stigma of mental illness:  
23  
24 psychometric properties of a new measure. *Psychiat Res.* 2003;121:31-49.  
25  
26  
27 21. Brohan E, Henderson C, Wheat K, *et al.* Systematic review of beliefs, behaviours and  
28  
29 influencing factors associated with disclosure of a mental health problem in the workplace.  
30  
31 *BMC Psychiatr.* 2012; Feb 16;12:11. doi: 10.1186/1471-244X-12-11.  
32  
33  
34  
35 22. McNair B, Hight N, Hickie I, *et al.* Exploring the perspectives of people whose lives  
36  
37 have been affected by depression. *Med J Australia.* 2002;176(20):S69-S76.  
38  
39  
40  
41 23. Angermeyer MC, Beck M, Dietrich S, *et al.* The stigma of mental illness: Patients'  
42  
43 anticipations and experiences. *Int J Soc Psychiatr.* 2004;50(2):153-162.  
44  
45  
46 24. Corrigan PW, Larson J, Ruesch N. Self-Stigma and the "why-try" effect: impact on life  
47  
48 goals and evidence-based practices. *World Psychiatry.* 2009;8(75):75-81.  
49  
50  
51 25. Dewa C. Worker attitudes towards mental health problems and disclosure. *J Occup*  
52  
53 *Environ Med.* 2014;5(4):175-186.  
54  
55  
56  
57  
58  
59  
60

- 1  
2  
3 26. De Graaf R, Ten Have M, Van Gool C, *et al.* Prevalence of mental disorders and trends  
4 from 1996 to 2009. Results from the Netherlands Mental Health Survey and Incidence  
5 Study-2. *Soc Psych Psych Epid.* 2012;Feb; 47 (2):203-213.  
6  
7  
8  
9  
10  
11 27. Toth KE & Dewa CS. Employee decision-making about disclosure of a mental disorder  
12 at work. *J Occup Rehabil.* 2014;24(4):732-46.  
13  
14  
15  
16 28. Moll, SE. The web of silence: a qualitative case study of early intervention and  
17 support for healthcare workers with mental ill-health. *BMC Public Health.* 2014;14(138). doi:  
18 10.1186/1471-2458-14-138.  
19  
20  
21  
22  
23 29. Mendel R, Kissling W, Reichhart T, *et al.* Managers' reactions towards employees'  
24 disclosure of psychiatric or somatic diagnoses. *Epidemiol Psychiatr Sci.* 2015. Apr;24(2):146-  
25 9.  
26  
27  
28  
29  
30  
31 30. Brohan E, Evans-Lacko S, Henderson C *et al.* Disclosure of a mental health problem in  
32 the employment context: qualitative study of beliefs and experiences. *Epidem Psychiatr Sci,*  
33 2014;23(3):289-300.  
34  
35  
36  
37  
38  
39 31. Henderson C, Brohan E, Clement S, *et al.* Decision aid on disclosure of mental health  
40 status to an employer: feasibility and outcomes of a randomised controlled trial. *Br J*  
41 *Psychiatry.* 2013;203:350-357.  
42  
43  
44  
45  
46  
47 32. Henderson C, Brohan E, Clement S, *et al.* A decision aid to assist decisions on  
48 disclosure of mental health status to an employer: protocol for the CORAL exploratory  
49 randomised controlled trial. *BMC Psychiatry.* 2012;12(133).  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60



- 1  
2  
3 33. Boot CR, Van den Heuvel SG, Bültmann U, *et al.* Work adjustments in a  
4  
5 representative sample of employees with a chronic disease in the Netherlands. *J Occup*  
6  
7 *Rehabil.* 2013;23(2):200-208.  
8  
9  
10  
11 34. Alonso J, Buron A, Rojas-Ferreras S, *et al.* Perceived stigma among individuals with  
12  
13 common mental disorders. *J Affect Disorders.* 2009;118:180-186.  
14  
15  
16 35. Evans-Lacko S, Courtin E, Fiorillo A, *et al.* The state of the art in European research on  
17  
18 reducing social exclusion and stigma related to mental health: a systematic mapping of the  
19  
20 literature. *Eur Psychiatry.* 2014;29(6):381-389.  
21  
22  
23  
24 36. Lerner D, Henke R. What does research tell us about depression, job performance,  
25  
26 and work productivity? *J Occup Environ Med.* 2008;50(4).  
27  
28  
29  
30 37. Smit F, Cuijpers P, Oostenbrink J, *et al.* Costs of nine common mental disorders:  
31  
32 implications for curative and preventive psychiatry. *J Ment Health Policy Econ.*  
33  
34 2006;9(4):193-200.  
35  
36  
37  
38 38. Lagerveld SE, Bültmann U, Franche RL, *et al.* Factors associated with work  
39  
40 participation and work functioning in depressed workers: a systematic review. *J Occup*  
41  
42 *Rehabil.* 2010;20(3):275-292.  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60



203x124mm (150 x 150 DPI)

Review only

STROBE 2007 (v4) Statement—Checklist of items that should be included in reports of *cross-sectional studies*

Section/Topic	Item #	Recommendation	Reported on page #
Title and abstract	1	(a) Indicate the study's design with a commonly used term in the title or the abstract	1
		(b) Provide in the abstract an informative and balanced summary of what was done and what was found	2
<b>Introduction</b>			
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported	5
Objectives	3	State specific objectives, including any prespecified hypotheses	6
<b>Methods</b>			
Study design	4	Present key elements of study design early in the paper	6
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	6
Participants	6	(a) Give the eligibility criteria, and the sources and methods of selection of participants	7
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	7
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group	7/8
Bias	9	Describe any efforts to address potential sources of bias	14
Study size	10	Explain how the study size was arrived at	7
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	9
Statistical methods	12	(a) Describe all statistical methods, including those used to control for confounding	9
		(b) Describe any methods used to examine subgroups and interactions	9
		(c) Explain how missing data were addressed	7
		(d) If applicable, describe analytical methods taking account of sampling strategy	
		(e) Describe any sensitivity analyses	10
<b>Results</b>			

Participants	13*	(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed	10
		(b) Give reasons for non-participation at each stage	7
		(c) Consider use of a flow diagram	
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders	17
		(b) Indicate number of participants with missing data for each variable of interest	7
Outcome data	15*	Report numbers of outcome events or summary measures	19
Main results	16	(a) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included	7
		(b) Report category boundaries when continuous variables were categorized	7
		(c) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses	11
<b>Discussion</b>			
Key results	18	Summarise key results with reference to study objectives	12
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias	15
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	15
Generalisability	21	Discuss the generalisability (external validity) of the study results	15
<b>Other information</b>			
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based	23

\*Give information separately for cases and controls in case-control studies and, if applicable, for exposed and unexposed groups in cohort and cross-sectional studies.

**Note:** An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at <http://www.plosmedicine.org/>, Annals of Internal Medicine at <http://www.annals.org/>, and Epidemiology at <http://www.epidem.com/>). Information on the STROBE Initiative is available at [www.strobe-statement.org](http://www.strobe-statement.org).