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First Depressed, Then Discriminated Against?

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ABSTRACT

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This study assesses hiring discrimination based on disclosed depression. We send out pairs of job applications from fictitious unemployed candidates to real vacancies in Belgium. Within each pair, one candidate cites depression as the reason for her/his unemployment, whereas the other candidate reveals no reason for unemployment. Overall, the hypothesis that applicants disclosing former depression are treated unfavourably is rejected. However, if we break up the data by the gender of the recruiter, we see that revealing former depression as a reason for unemployment is rewarded by female recruiters, whereas it affects the hiring decisions made by male recruiters in a non-positive way.

JEL Classification: I14, J71, C93

Keywords: economics of health, depression, hiring discrimination, field experiments

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1 Introduction

Many studies have documented diminished labour market activity related to depression (see, e.g., Baldwin and Marcus, 2014; Frijters et al., 2010) and the consequent economic burden for both individuals and society (Kessler et al., 2008). Moreover, it has been shown that being distanced from the labour market makes depression more persistent (Lloyd and Waghorn, 2007; Roy and Schurer, 2013). Therefore, not surprisingly, the reintegration into the labour market of employees inactive due to (former) depression is a key ambition of many OECD countries (OECD, 2013).

The development of adequate policy responses requires the assessment of the hurdles (formerly) depressed individuals face when attempting to reintegrate into the labour market. Next to supply side differences in human capital and preferences (Elinson et al., 2004; Ettner et al., 1997), hiring discrimination based on (former) depression may be one of the key hurdles facing (formerly) depressed individuals. As predicted theoretically by Becker (1957) and Arrow (1973), employers may hesitate to hire employees with mental problems due to either a distaste (of the employers, co-workers or customers) to collaborate with them, a fear of diminished productivity or anticipated sick leave problems. Yet, the stigma effect of a depression-related sick leave spell may be dominated by the well-documented stigma effect of a non-health related unemployment spell of comparable length (Vishwanath, 1989).

Some studies provide indicative *empirical* evidence of hiring discrimination based on disclosed depression (Ando et al., 2013; Brohan et al., 2011; Henderson et al., 2013, Stuart, 2006). Because these studies, however, are based on survey data, their findings may reflect perceptions of discrimination and unobserved differences in human capital rather than causal evidence of unequal treatment.

In this study, we assess hiring discrimination based on disclosed depression in a direct

and causal way. To this end, we send out job applications to real Belgian vacancies from fictitious unemployed candidates only differing in the reason provided for unemployment (former depression or no reason at all). We identify unequal treatment on the basis of the provided reason for unemployment by analysing the differences in call-back of our fictitious candidates.

The empirical literature documents lower epidemiology of and more negative attitudes towards depression among men (Berger et al., 2012; Oliffe and Philips, 2008; Ogrodniczuk and Oliffe, 2011; Van de Velde et al., 2010). In addition, Hammen and Peters (1978) show that depression is generally more often rejected by persons of the opposite sex. These findings suggest we may expect the detrimental effect of revealing former depression on hiring chances to be more pronounced if the recruiters are male, especially if they are confronted with female job candidates. In contrast, other studies suggest that men disclosing depression may suffer more stigmatisation than their female peers (McCusker and Pez Galupo, 2011). We therefore proceed with inspecting the candidate and recruiter gender heterogeneity in unequal treatment due to disclosed depression.

2 The Experiment

We set up a correspondence experiment in the spirit of Bertrand and Mullainathan (2004). Within such an experiment, pairs of fictitious job applications are sent to real vacancies. The two applications within each pair are equivalent, except for the characteristic of interest. By monitoring the subsequent call-back, unequal treatment based on this single characteristic is identified. This correspondence testing framework is widely viewed as providing the most convincing evidence of hiring discrimination (Riach and Rich, 2002). Without such experimental data, researchers possess considerably less data than employers. By

consequence, applicants that appear similar to researchers on the basis of standard non-experimental data may in fact be very different in the eye of their prospective employers. A correspondence experiment, in contrast, eliminates selection based on individual unobservable characteristics because the researcher fully controls the information available to the employer, allowing the researcher to disentangle discrimination from alternative explanations of heterogeneous hiring outcomes, such as differences in human capital or in employer preferences.

Our experiment was conducted between November 2013 and March 2014 in Flanders, the Dutch speaking part of Belgium. Two applications of unemployed candidates, only different in the characteristic that one indicated a former depression for being unemployed, were sent to 304 vacancies. From the database of the Public Employment Agency of Flanders – the region's major job search channel – we randomly selected vacancies in the occupations of laboratory worker, representative, production worker and barkeeper. These occupations were chosen for the expected variation in levels of skill and customer contact.

We created two template types of resumes and cover letters, to which we refer to as "Type A" and "Type B" applications, for each of the four aforementioned occupations, each matching the general requirements of these occupations in terms of schooling and experience. Type A and Type B applications were, at the level of the occupation, identical in all job-relevant characteristics but differed in inessential details and in lay-out. All applicants were born, living and had studied in Ghent, the second largest city of Flanders. They were 37 or 38 years old and married. After leaving school, all candidates had been working in similar jobs until November 2012, a year before the start of our experiment.

We sent two applications, one of Type A and Type B, to each selected vacancy. One member of each pair indicated a former severe depression as reason for unemployment. This was done by adding the clause: "In view of a trustful collaboration, I want to mention that

during the last year I was inactive due to a severe depression. Today, I have completely recovered and I am ready for a new professional challenge". The other pair member did not mention any reason for unemployment and instead added: "As you can read in my resume, I have been unemployed during the last year. I am, however, very motivated to start in a new job." To eliminate any application type effects on call-backs, we alternately assigned the formerly depressed and non-depressed identity to the Type A and Type B applications. To inspect the candidate gender heterogeneity in unequal treatment due to disclosed depression, we also alternated the gender of the two candidates within each pair. Subsequently, we sent the resulting combinations in an alternating order to the employers, each time with approximately 24 hours in between.

Call-backs were received by telephone, voicemail or email. In our analysis we distinguish between two definitions of positive call-back. Positive call-back sensu stricto means the applicant is invited for an interview concerning the job for which he applied. Positive call-back sensu lato also includes the receipt of an alternative job proposal and the request to provide more information or to contact the recruiter.

3 Results

Table 1 describes the data of our experiment. Panels A and D provide statistics at the level of the total dataset. Overall, in 56 (104) of the 304 vacancies at least one candidate received a positive call-back sensu stricto (sensu lato). Sixteen (22) cases resulted in a positive call-back for just the candidate not mentioning any reason for unemployment and 16 (24) for the candidate mentioning past depression. Based on these data, we calculate two statistical measures: the net discrimination rate and the positive call-back ratio. First, we calculate the net discrimination rate by subtracting the number of applications for which the candidate

mentioning depression was preferred from the number of applications for which the candidate not mentioning depression was preferred and then divide this difference by the number of applications where at least one candidate received positive call-back. Table 1 shows that the net discrimination rate is 0.00 (-0.02) adopting the sensu stricto (sensu lato) definition of a positive call-back. Based on a standard χ^2 test, we cannot reject the null hypothesis that there is no net discrimination on average. Second, we calculate the positive call-back ratio by dividing the percentage of applications for which candidates not mentioning depression received a positive call-back by the corresponding percentage for the candidates with a history of depression. The results in Table 1 confirm the findings based on the net discrimination rate. The average positive call-back ratio sensu stricto (sensu lato) is 1.00 (0.98), indicating that candidates not revealing depression as a reason for unemployment got on average as many (2% less) positive reactions as their counterparts mentioning depression. These ratios are not significantly different from one. As, by construction, both candidates exhibit the same observable characteristics per vacancy, regression analysis leads to the same result. The answer, therefore, to our first research question is that we cannot reject that, on average, employers did not discriminate based on disclosed former depression when making their hiring decisions in the occupations included in our experiment.

TABLE 1 ABOUT HERE

Next, we inspect the heterogeneity in unequal treatment by the gender of the candidate (based on Panels B and E of Table 1) and of the recruiter (Panels C and F). When splitting the data by the gender of the candidate, evidence for unequal treatment based on disclosed depression is found neither for male nor female candidates. We get a different picture, however, when splitting the data by the gender of the recruiter (proxied by the name of the contact person mentioned in the vacancy). Candidates not mentioning a former depression

get more invitations for a job interview when the recruiter is male, while candidates mentioning a former depression are treated favourably by women. Concerning the probability of getting any positive reaction, the discrimination measures go in the same direction but are less significant.

While the gender of the candidate is randomised over the application procedure, this is not the case for the gender of the recruiter. Thereby, the gender of this recruiter may correlate with application and vacancy characteristics. To control for these characteristics, we conduct the regression analysis reported in Table 2. We regress positive call-back (sensu stricto in models (1) to (5) and sensu lato in models (6) to (10)) on former depression (model (1) and (6)), former depression by gender of the recruiter (model (2) and (7)), former depression by gender of the recruiter and an additional interaction with gender of the candidate (model (3) and (8)), former depression by gender of the recruiter and the candidate (model (4) and (9)) and former depression by gender of the recruiter and interactions with gender of the candidate and vacancy characteristics (model (5) and (10)). In all regressions we control for vacancy fixed effects such that any impact of the mentioned variables without interaction with former depression is controlled. Random effect estimations yield equivalent results.

TABLE 2 ABOUT HERE

The regressions in Table 2 suggest that the effects of disclosing a former depression by gender of the recruiter are fairly robust when added to the interactions between former depression and candidate gender or vacancy characteristics in the model. Therefore, we can conclude that revealing former depression as a reason for unemployment is, relative to providing no reason at all, rewarded by female recruiters, whereas it affects the hiring decisions made by male recruiters in a non-positive way. Second, the regression model (4) suggests that male recruiters discriminate specifically against female candidates revealing a

former depression. These regression results align with our expectations based on the literature reviewed in the introduction and may be an explanation for the presence of gender heterogeneity in the relationship between mental health and labour market success (Frijters et al., 2010; Ojeda et al., 2010). Last, our evidence suggests more unfavourable treatment of formerly depressed candidates within low-skilled occupations. This is consist with the literature indicating less unequal treatment in tight labour markets (Baert et al., Forthcoming), which is the case for high-skilled positions in Flanders. This result is also in line with the literature indicating a negative relationship between unexplained unemployment duration and hiring chances (Kroft et al., 2013), given that unemployment spells are on average lower among the high-educated and that the stigma of an unexplained unemployment spell of a year may therefore be more negative for high-educated applicants.

4 Conclusion

We investigated hiring discrimination based on former depression in a direct, empirical way. To this end, we sent out fictitious job applications differing only in the reason these candidates gave for their unemployment (a former depression or no reason at all). We conclude that revealing former depression as a reason for unemployment is rewarded by female recruiters, whereas it affects the hiring decisions made by male recruiters in a non-positive way, and among these male recruiters the effect is heterogeneous by the gender of the candidate. In addition, our evidence suggests more unfavourable treatment of formerly depressed candidates within low-skilled occupations.

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Table 1: Data Description.

Observations	Jobs	Neither candidate positive call-back	Both candidates positive call-back	Only candidate not mentioning depression positive call-back	Only candidate mentioning depression positive call-back	NDR	χ^2	PCR	t
	(No.)	(No.)	(No.)	(No.)	(No.)				
A. Positive call-back sensu stricto: All observations									
All observations	304	248	24	16	16	0.000	0.000	1.000	0.000
B. Positive call-back sensu stricto: Heterogeneity by gender of the candidate									
Male candidate	152	126	14	4	8	-0.154	1.333	0.818	1.156
Female candidate	152	122	10	12	8	0.133	0.800	1.222	0.894
C. Positive call-back sensu stricto: Heterogeneity by gender of the recruiter									
Male recruiter	134	110	8	12	4	0.333**	4.000	1.667**	2.023
Female recruiter	170	138	16	4	12	-0.250**	4.000	0.714**	2.018
D. Positive call-back sensu lato: All observations									
All observations	304	200	58	22	24	-0.019	0.087	0.976	0.294
E. Positive call-back sensu lato: Heterogeneity by gender of the candidate									
Male candidate	152	103	34	6	9	-0.061	0.600	0.930	0.774
Female candidate	152	97	24	16	15	0.018	0.032	1.026	0.179
F. Positive call-back sensu lato: Heterogeneity by gender of the recruiter									
Male recruiter	134	91	22	14	7	0.163	2.333	1.241	1.535
Female recruiter	170	109	36	8	17	-0.148*	3.240	0.830*	1.812

Notes. The net discrimination rate (NDR) is calculated by reducing the number of applications for which the candidate not mentioning depression was preferred by the number of applications for which the candidate mentioning depression was preferred and this difference is then divided by the number of application pairs in which at least one received a positive call-back. The chi-square test for the NDR tests the null hypothesis that both candidates are treated unfavourably just as frequently. The positive call-back ratio (PCR) is calculated by dividing the percentage of applications for which candidates not mentioning depression received a positive call-back by the corresponding percentage for candidates mentioning depression. The t-test for the PCR tests the null hypothesis that the probability of a positive answer is the same for candidates from both groups. As two applicants contacted the same firm, the probability of the applicant not mentioning depression receiving an invitation correlates with the probability of the applicant mentioning depression receiving one. Therefore, standard errors are corrected for clustering of the observations at the vacancy level. *** (**) ((*)) indicate significance at the 1% (5%) ((10%)) significance level, respectively.

Table 2: The Probability of Positive Call-back: Linear Probability Model Regression Estimates.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Former depression	0.000 (0.019)					0.007 (0.022)				
Former depression x Male recruiter		-0.060** (0.029)	-0.064** (0.030)		-0.061** (0.029)		-0.052 (0.034)	-0.055 (0.035)		-0.047 (0.035)
Former depression x Female recruiter		0.047** (0.023)	0.051** (0.024)		0.048* (0.025)		0.053* (0.029)	0.055* (0.029)		0.048* (0.029)
Former depression x Female candidate (normalised)			-0.066* (0.039)		-0.064 (0.040)			-0.039 (0.046)		-0.036 (0.045)
Former depression x Male recruiter * Male candidate				0.000 (0.026)					-0.026 (0.032)	
Former depression x Male recruiter * Female candidate				-0.138** (0.057)					-0.086 (0.066)	
Former depression x Female recruiter * Male candidate				0.053 (0.037)					0.066* (0.039)	
Former depression x Female recruiter * Female candidate				0.043 (0.030)					0.043 (0.043)	
Former depression x Occupation: representative (normalised)					-0.012 (0.052)					-0.068 (0.067)
Former depression x Occupation: production worker (normalised)					-0.071 (0.044)					-0.146** (0.061)
Former depression x Occupation: barkeeper (normalised)					-0.089 (0.064)					-0.109 (0.073)
Former depression x Temporary contract (normalised)					-0.090 (0.066)					-0.008 (0.085)
Former depression x Part-time contract (normalised)					0.035 (0.058)					-0.017 (0.070)
Constant	0.132*** (0.009)	0.132*** (0.009)	0.132*** (0.009)	0.132*** (0.009)	0.132*** (0.009)	0.263*** (0.011)	0.263*** (0.011)	0.263*** (0.011)	0.263*** (0.011)	0.263*** (0.011)
Dependent variable: invitation to a job interview	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No
Dependent variable: any positive reaction	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes
Vacancy fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	608	608	608	608	608	608	608	608	608	608

Notes. Standardised variables are obtained by subtracting the mean among the population of formerly depressed candidates from the original variable. Standard errors, corrected for clustering at the vacancy level, are in parentheses. *** (**) ((*)) indicate significance at the 1% (5%) ((10%)) levels, respectively.