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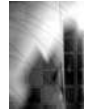
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Abstract

The relationships between unemployment, mental health (care) and medication use among 50–65 year-old men ($N = 11,789$) and women ($N = 15,118$) are studied in Europe. Inspired by the social norm theory of unemployment, the relevance of regional unemployment levels and workplace closure are explored, using multilevel analyses of data from the Survey of Health, Ageing and Retirement. In line with the social norm theory, the results show that – only for men – displaced workers are less depressed and use less medication than the non-displaced unemployed. However, they report more depressive symptoms than the employed, which supports the causal effect of unemployment on mental health. Non-displaced unemployed men are also more likely to consume medication than the displaced unemployed. In addition, using regional unemployment as a proxy for the social norm of unemployment can be questioned when studying mental health effects, as it seems to be a stronger measurement of labour market conditions than of the social norm of unemployment, especially during a recession.

Keywords

displaced workers, Europe, mental health, mental health care and medication use, multilevel analysis, regional unemployment rates, social norm of unemployment

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Introduction

The recent economic crisis, which started in 2007, has been characterized by rising unemployment (Eurofound, 2013). In particular, the group of displaced workers (i.e. those who have lost their job due to plant or business closures) has increased. Concerns have been raised about an increase in mental health problems and the demand for care. Research has consistently related unemployment to worse mental health (Paul and Moser, 2009) and a greater use of health care and psychotropic drugs (Jin et al., 1995; Rugulies et al., 2010), even after taking people's current mental health into account (Buffel et al., 2015a, 2015b). However, the intensity of these mental health consequences may vary, as unemployment can be experienced differently in an area with a low level of overall unemployment and one with a high level. The economic recession not only makes this topic highly relevant, but also offers a good opportunity to test the social norm theory of unemployment (i.e. that people experience unemployment in a more individualized way when they live in circumstances where unemployment is less common). The impact of the crisis has differed strongly between and within countries, as reflected in the large variance in national and regional unemployment rates (Eurostat, 2014). Based on the social norm theory, the question can be asked whether unemployment hurts less when it is more common, because the unemployment level could be considered an indirect indication of the degree of adherence to or representation of the norm of unemployment (Clark, 2003; Clark et al., 2010). Aggregate unemployment may also be related to the well-being of the employed, but in the inverse direction. In a context of high unemployment, the employed will experience more job insecurity and maybe even feelings of guilt towards those who have lost their jobs. Additionally, high unemployment rates may limit workers' bargaining power, and force workers to accept less desirable employment conditions (Benach et al., 2014). In sum, both processes can shrink the health gap between the unemployed and the employed.

Studies on the social norm of unemployment have mainly used very general well-being measurements as outcomes, such as life satisfaction and happiness (Clark, 2003; Oesch and Lipps, 2013; Shields et al., 2009; Stam et al., 2015; Winkelmann, 2014). However, as social norm theory deals with issues such as the stigmatization, normalization, self-blame, social exclusion and (de)individualization of the unemployed, it is surprising that this has not been previously related to specific mental health problems such as depression, and the utilization of mental health services.

This study tests the social norm effect of unemployment on mental health, as well as on medication and mental health care use of the unemployed. This is carried out in two ways. First, by exploring whether the relationship between employment status and mental health and care use is weaker in regions with higher overall unemployment rates. Although the most commonly used method, this has recently been questioned by some researchers (Stam et al., 2015), who have encouraged the development of alternative approaches. Therefore, second, the logic of social norm theory is applied to the difference between the displaced unemployed and the non-displaced unemployed. Typical characteristics of the displaced unemployed are that they have lost their job together with a group of others and that their unemployment is clearly structural. In addition, using a displaced worker approach also has methodological advantages, which are explained later.

The majority of studies cover only one or two countries (Australia (Shields et al., 2009), Germany (Clark et al., 2010; Oesch and Lipps, 2013; Schwarz, 2012; Winkelmann, 2014), Switzerland (Oesch and Lipps, 2013) and the UK (Clark, 2003)). By using data from the fourth wave of the Survey of Health, Ageing and Retirement in Europe (SHARE), information for 16 European countries and 97 regions for 2010–2012 after the onset of the financial crisis is available, and this allows us to distinguish within the group of the unemployed between the displaced and the non-displaced.

The research focuses on the group of over 50s who are still included in the labour force (50–65 years old). The age of 65 is taken as the maximum age as this is the legal retirement age in most European countries (Alavinia and Burdorf, 2008). They are an interesting research population for two main reasons. First, the European context is of an ageing population and this group is the target of policies which envisage the enhancement of health as well as social and labour market participation. Second, during economic instability, people at both ends of the age spectrum are especially vulnerable to marginalization in the labour market (Eurofound, 2013). When people over 50 become unemployed, the chances of them finding a new job are low (Eliason and Storrie, 2009a), which may make the impact of the social norm of unemployment even more important (Clark et al., 2010; Schwarz, 2012). The analyses are also performed separately for men and women, as it is expected that their mental health and care use are affected differently by employment status (Buffel et al., 2015a, 2015b; Clark, 2003; Clark et al., 2010; Kulik, 2000).

Background

The social norm theory

Social norms constitute a central topic in economics, social psychology and sociology. They are often used to explain or rationalize behaviours (Elster, 1989). In Elster's pioneering work (1989), he claims that norms are social, if they are shared by other people and partly sustained by their approval and disapproval. The emergence of the social norm is mostly left undefined, but its evolution depends on the behaviour of societal members or 'relevant others' (Clark, 2003; Fehr and Fischbacher, 2004). Social norms can prevail in a family, a peer group, an organization or even a whole society (Fehr and Fischbacher, 2004). Social norm theory derives from the idea that people are concerned with their relative standing within a group (Schwarz, 2012). How people evaluate and perceive their situation depends on how they conform to or deviate from the norms of the social reference group (Winkelmann, 2014). A large body of social research focuses on social norms and has applied the theory to a range of very diverse topics, from human cooperation (Fehr and Fischbacher, 2004) to body image (Britton et al., 2006). In the sociology of work, social norms seem to play an important role, for example with regard to the age of retirement (Radl, 2012), employment commitment (Van der Wel and Halvorsen, 2015) and gendered social norms in care work (Hebson et al., 2015). In the subfield of unemployment, social norm theory can yield important insights into the relation between unemployment, mental health and health care use.

The main implication of viewing unemployment as a social norm is that the psychological impact of an individual's own unemployment will be reduced where there are

high rates of unemployment in the wider labour market (Clark, 2003). Despite being highly relevant, only a few empirical studies (Clark, 2003; Clark et al., 2010) have tested the impact of the social norm on the relation between employment status and (mental) health. This is doubtless because of the difficulty of measuring the social norm of unemployment (Clark, 2003). Some studies rely on the work ethic or the social norm to work (Stam et al., 2015), which they have tried to measure in a direct way by items such as 'Work is a duty towards society'. Recent research (Stam et al., 2015) using a direct measurement of the social norm to work at the country level does not support a moderation effect between unemployment and well-being. It is possible that country-level indicators do not adequately capture what exists in people's life and work environment. Research directly measuring the work norm at the community (Lalive and Stutzer, 2004) or individual level (Winkelmann, 2014), has confirmed that the negative effect of unemployment on life satisfaction is higher in the group of unemployed relying on strong work norms. However, it can be questioned whether the norm to work is comparable with the norm of unemployment, especially among the unemployed. Being unemployed in a region where 25 per cent are unemployed, compared with one where the rate is only 3 per cent, will be experienced differently in terms of individual responsibility and structural cause versus personal failure, irrespective of whether there is a strong work ethic or not in the region.

Regional unemployment rates as a proxy for the social norm of unemployment

A more common way of measuring the social norm of unemployment than the direct measurement (see above) is by referring to regional unemployment rates as a proxy of adherence to the norm of unemployment. Being unemployed in a context of high aggregate unemployment may be less stigmatizing and shameful because people share a common experience (Oesch and Lipps, 2013). When the deviation from the social norm is smaller (Clark, 2003; Clark et al., 2010), the consequences for mental health and medical care use may also be lowered. In regions with high unemployment, it may be easier for the unemployed to follow their daily routine and to keep in contact with others, which may also weaken the negative effects of unemployment on mental health (Schwarz, 2012). Moreover, common negative prejudices, such as the unemployed being lazy or lacking the capacities to fit in the labour market, become less prominent if unemployment is widely and more randomly distributed (Schwarz, 2012). By contrast, being unemployed in regions where only a minority of others are unemployed, may create a feeling of social exclusion and trigger the process of stigmatization, which will strengthen the negative health effects. The unemployed will be more likely to be considered as responsible for their situation and individual characteristics are pointed to as the main causes of unemployment, to a greater degree than the business cycle is (Wiggan, 2012). As a result, the unemployed possibly experience more stress, self-blame, shame and other negative feelings, which could lead to isolated non-specific symptoms, for which they are pushed towards individual treatment and for which medication is sought, irrespective of the actual need for mental health care (Buffel et al., 2015a, 2015b). How

problems and the causes of problems are defined, determines who or what is considered as responsible – society or the individual – and which treatments are imposed or used (Olafsdottir, 2010).

To date, however, the spillover effects of high unemployment rates on mental health, and in particular on health care utilization by the unemployed, remain incompletely understood and the empirical evidence is not straightforward. Clark (2003) found that in British regions with high unemployment, unemployed people enjoy a relatively higher level of happiness, whereas the employed are less happy. In Germany, he only found evidence for the social norm effect among the unemployed who have poor prospects of finding new work (Clark et al., 2010). In Australia, unemployed men have higher levels of life satisfaction in regions with a higher unemployment rate (Shields et al., 2009), while in Germany, only a negative effect of high regional unemployment on the well-being of the employed was observed due to a higher individual perception of job insecurity (Schwarz, 2012). Oesch and Lipps (2013) found no evidence for the social norm effect on the well-being of the unemployed in either Germany or Switzerland.

Although the use of unemployment rates as a proxy for the degree of adherence to the norm of unemployment has revealed important theoretical insights, it also has some limitations, which possibly cause these ambiguous results. The unemployment rate is also an indicator of labour market conditions (Oesch and Lipps, 2013), therefore the social norm effect may be countered by the insecurity of not finding new work and the increased competition in a scarce job market. In addition, using unemployment rates as a proxy for the social norm of unemployment may point to indirect evidence for a social norm effect, as it is not known whether these social norms are really internalized.

An alternative application of the social norm of unemployment: displaced versus non-displaced unemployed

An alternative application of the social norm of unemployment is proposed because of the difficulties of the previous approach. This alternative application contributes substantively as well as methodologically to the field (Clark, 2003). Unemployment may not only be related differently to mental health depending on the context, but also depending on the characteristics of unemployment. Based on the logic behind the social norm theory (Clark, 2003; Clark et al., 2010), being unemployed because of workplace closure may be experienced in a different way to being unemployed under other circumstances. People in the former category – known as displaced workers – are characterized by a structural cause for job loss (Fallick, 1996). This type of unemployment can be considered as exogenous to the individual. It can be perceived as a social problem rather than an individual issue, given that the unemployed person will not be the only one in the same position and they may compare themselves with colleagues who have also lost their jobs. As a result, they may be affected less in terms of self-blame and self-esteem (Eliason and Storrie, 2009b; Morris and Cook, 1991; Winefield et al., 1992), and the relationship between unemployment and poor mental health may attenuate. Being unemployed with a clear structural cause may also reduce the perception of a personal failure that needs medical treatment. Furthermore, it is easier for the unemployed to establish

social contacts and to escape from boredom if colleagues are also unemployed (Kessler et al., 1987).

The displaced worker approach also has a very important methodological advantage. The direction of causality for the negative relationship between unemployment and mental health remains inadequately understood (Eliason and Storrie, 2009a). The selection hypothesis posits that the association may be because people in poor health are more likely to lose their job (Lindholm et al., 2001) or remain unemployed for longer (Stewart, 2001). By contrast, the causation hypothesis assumes that unemployment leads to a deterioration in health (Schroder, 2010, 2013).

Researchers have suggested that dealing with this issue of endogeneity by using the displaced workers approach is superior to studies that do not pay attention to the reason for unemployment (Schroder, 2013; Winkelmann, 2014). In the case of exogenous unemployment, variation in unemployment is not driven by individual health or capabilities, as it can be assumed that the individual health status of a worker does not influence the closure of a company (Schroder, 2013; Strully, 2009). As a result, the possible selection bias is minimal (Schroder, 2010, 2013; Strully, 2009). Therefore, observing a negative relationship between displaced workers and mental health would be strong evidence for the causation hypothesis.

A few studies have already used the displaced workers approach, mostly by performing a plant closure (case) study as a form of quasi-experiment (Browning et al., 2006; Eliason and Storrie, 2009a; Schmitz, 2011; Sullivan and Von Wachter, 2009) or by taking the reason for unemployment into account in survey research (Schroder, 2010, 2013; Strully, 2009). The typical deficiencies of plant closure studies (Browning et al., 2006; Eliason and Storrie, 2009a; Morris and Cook, 1991) can be overcome by using survey data. The employed, together with the non-displaced unemployed, can be used as a control group, thereby providing a larger and more representative sample than in a case study. Moreover, the displaced workers are not restricted to a specific profession, which allows light to be shed on the unexplored situation of white-collar workers (Fallick, 1996). The current study follows the survey approach.

Hypotheses

The theoretical outlining of the social norm theory of unemployment, applied to mental health, mental health care and medication use, brings us to the following two sets of hypotheses. First, based on the common way of testing the theory by using regional unemployment rates as proxies for the adherence to the norm of unemployment, it can be hypothesized that:

Hypothesis 1.a: The negative relation between unemployment and mental health will be weaker in regions with a higher level of unemployment compared to regions with lower unemployment rates.

Hypothesis 1.b: The positive relation between unemployment and medical care use will be weaker in regions with a higher level of unemployment compared to regions with lower unemployment rates.

Based on the alternative approach of the social norm theory by differentiating between the displaced and non-displaced unemployed, the following two hypotheses are formulated:

Hypothesis 2.a: *The negative relation between unemployment and mental health will be weaker for the displaced unemployed than the non-displaced unemployed.*

Hypothesis 2.b: *The positive relation between unemployment and medical care use will be weaker for the displaced unemployed than the non-displaced unemployed.*

Methods

Dataset

Data from the fourth wave of the Survey of Health, Ageing and Retirement in Europe (SHARE) are used. This was collected between 2010 and 2012 in 16 European countries (Austria, Belgium, Switzerland, Germany, Denmark, Spain, France, Italy, the Netherlands, Sweden, the Czech Republic, Poland, Estonia, Hungary, Portugal and Slovenia). The SHARE is a multidisciplinary and cross-national panel database. Details about the sampling procedure can be found elsewhere (Borsch-Supan et al., 2013), but overall it consists of probability samples, drawn from population registers or from multistage sampling. Respondents aged 50 or over and their partners were interviewed face-to-face using structured, computerized questionnaires. All the items used here were retrieved from the fourth wave, except sociodemographic data and information on wealth, which were taken from the first wave of the SHARE the respondents participated in.

A subpopulation was selected, comprising individuals between 50 and 65 years old ($N = 29,814$; 55.8% women; 44.2% men), because 65 is considered the retirement age in most European countries (Alavinia and Burdorf, 2008). Except for wealth (see below), no variable has more than 5.7 per cent missing values. The accumulated percentage of missing values for men was 10.5 per cent and for women 9.2 per cent. These cases were omitted from the sample. The final sample contains information on 11,789 men and 15,118 women. For the descriptive results, see Online Appendix A.

Measurements

For specialized mental health care use, a dummy variable *psychiatrist consultations* (1 = yes; 0 = no) was constructed, based on the question relating to whether the respondent had consulted a psychiatrist in the 12 months preceding the interview. In addition, the *number of consultations with a general practitioner* (GP) during the same period was also introduced (as a count variable), because GPs are frequently contacted for mental health issues (Gouwy et al., 2008). As the reason for consultation is not explicitly referred to in the questionnaire and GPs can also be contacted for physical complaints, this item was controlled for general health. *General health status* was measured by a single question: 'How is your health in general?', with five answer categories from very good (1) to very bad (5). The respondents were also asked whether they were taking *medication for anxiety and depression* at least once a week (1 = yes; 0 = no).

The SHARE enables the degree of distress to be taken into account by gender, as it provides gender-specific indicators of mental health. Women suffer more from anxiety and depressive disorders, while men suffer more from impulsive and addictive problems, such as alcohol consumption (Vesga-Lopez et al., 2008). For the operationalization of *depressive symptoms*, the EURO-D 12-item scale varying from 0 (not depressed) to 12 (very depressed) was used (Prince et al., 1999). This scale has been validated in a cross-European study on depression (Copeland et al., 1999). *Heavy episodic drinking* (HED) is defined as drinking at least 60 grams of pure alcohol on at least one occasion in the seven days prior to the survey (World Health Organization (WHO), 2014).

Employment status contains five categories: employed, unemployed, early retired (comprising people between 50 and 65 years old), homemakers and the inactive due to illness or disability. Within the group of the unemployed, a distinction was made between *displaced unemployed*, which refers to people unemployed because of workplace closure, and *non-displaced unemployed* (laid off, no extension of contract, their own decision and other non-structural reasons).

A number of socioeconomic and demographic factors that have been found to be related to mental health and care use were also controlled for. The consumption of medication for depression and anxiety increases by age (Graham and Vidal-Zeballos, 1998), whereas older people are more reluctant to contact specialized care (McAlpine and Boyer, 2007). *Age* is the age at the date of the interview, shown as a categorical variable: 50–55 (reference category), 55–60 and 60–65 years old. Education is positively related to mental health and specialized care use, whereas it is somewhat negatively related to general care use (Gouwy et al., 2008). *Education* was categorized into lower (no schooling or levels 0–2), medium (levels 3–4) and higher (levels 5–6) according to the International Standard Classification of Education-97 (ISCED-97). *Partner status* is a dichotomous variable (co-resident partner = 1, no partner or non-resident partner = 0). Having a partner has been shown to be positively related to mental health, but negatively to mental health care use (Buffel et al., 2014). Whether the respondents were living in their country of birth is also included (*migratory status*: 0 = non-migrant; 1 = first-generation migrant) to capture the positive effects of migration on depressive symptoms (Missinne and Bracke, 2012) as well as on mental health care use (Koopmans et al., 2013). Moreover, migrants are often part of a minority group, which has higher unemployment rates and probably stronger negative health effects of being unemployed (Paul and Moser, 2009). The *degree of urbanization* can be considered as a proxy for health care supply, because the availability of medical professionals may vary from a large city to a more rural area (Saxena et al., 2007). The five possible answers were reduced to a three-categorical variable: large or medium city (reference group); small town; and rural area or village. Finally, to capture any financial barriers to health care and medication use, *household wealth* was included. This was constructed by combining financial information about the main residence, the value of other real estate and the household's gross and net financial assets (MEA, 2013). Wealth was used instead of income, because wealth more accurately captures the actual financial situation of this age group (Galobardes et al., 2006). In order to deal with missing information on the wealth measurement, the multiple imputed datasets provided by the SHARE were employed. By imputing each missing value five times, a distribution of the missing value was created.

The *regional unemployment rates* for 2010 were retrieved from Eurostat (2014). For the regional level, the first-level Nomenclature of Territorial Units for Statistics (NUTS) was used, but for the countries where NUTS level 1 corresponds to the country as a whole, NUTS level 2 was used. After recoding, 97 regions were retained, each having at least six respondents. The results of the bivariate analyses can be found in Appendix B (for the metric variables, correlation matrix), Appendix C (for the categorical and metric variables (compare means)) and Appendix D (for the categorical variables (crosstabs)).

Analyses

The analyses comprise two parts. The first uses the indicators of mental health – depression and heavy episodic drinking – as dependent variables (Table 1) and subsequently, analyses were performed with the indicators of (mental) health care and medication use as the outcomes (Table 2). In both parts, a baseline model was estimated, exploring the relationship with employment status and controlling for other determinants of mental health (care) – age, migratory status, community, education, wealth and partner status – and the regional unemployment rate. In the second part (Table 2), (mental) health care and medication use are the dependent variables. In the next model, the two indicators of mental health were included (with regard to GP consultations, general health was also controlled for), in order to examine whether the relationships could be mainly ascribed to the respondents' mental health status. Subsequently, the two applications of the social norm of unemployment theory were introduced. One model examines whether the regional level of unemployment moderates the relationships between unemployment and mental health (Table 1, Models 2, Hypothesis 1.a), and between unemployment and (mental) health care use (Table 2, Models 3; Hypothesis 1.b). This was modelled by means of interaction terms. In the other model, the causation hypothesis is tested and it was estimated whether the relationships of the unemployed with mental health (Models 3; Hypothesis 2.a) and (mental) health care use (Models 4; Hypothesis 2.b) differ between the displaced and the non-displaced unemployed. Given that 'displaced versus non-displaced unemployed' is a conditional factor, as it is only applicable to the unemployed, internal-interaction effects were used (Mirowsky, 1999). The difference in comparison to a common interaction effect is that there is no main effect of the dummy displaced versus non-displaced unemployed.

Respondents are nested in two contexts – the region and the country – resulting in three-level multilevel models, which were calculated in MLwiN 2.15. Respondents (1) are nested in regions (2), which are nested in countries (3). Depending on the type of dependent variable, different multilevel analyses were carried out: multiple regression for the metric variable of depression, and logistic regressions for the dichotomous outcomes (HED, psychiatrist consultations and medication use). For the latter, penalized (or predictive) quasi likelihood (PQL) was used, because it provides more accurate estimates than first order marginal quasi likelihood (MQL) (Hox, 2010). For the count variable (number of GP consultations), a negative binominal regression was needed in order to cope with the problem of over-dispersion (Van Rossem, 2010). The results of the control variables can be found in the extended tables in Appendix E (Extended Table 1), Appendix F (Extended Table 2, men) and Appendix G (Extended Table 2, women).

Table 1. The relationship between employment status and mental health indicators, by regional unemployment rate and displaced versus non-displaced unemployment.

	Depression						Heavy episodic drinking					
	Model 1		Model 2		Model 3		Model 1		Model 2		Model 3	
	B	SE	B	SE	B	SE	OR	OR	OR	OR	OR	OR
Men												
Intercept	2.303	0.097***	2.293	0.096***	2.302	0.097***	0.356***	0.355***	0.356***	0.355***	0.356***	0.356***
Employment status (ref. employed)												
Unemployed	0.730	0.070***	0.767	0.073***	0.810	0.081***	1.292***	1.269***	1.269***	1.269***	1.364***	1.364***
displaced					-0.281	0.142					0.812*	0.812*
Early retired	0.390	0.048***	0.398	0.048***	0.388	0.048***	1.133**	1.133**	1.133**	1.133**	1.132**	1.132**
Disabled/ill	1.820	0.072***	1.832	0.074***	1.820	0.072***	0.991	0.994	0.994	0.994	0.990	0.990
Homemaker	0.582	0.137***	0.578	0.138***	0.581	0.137***	0.793	0.775	0.775	0.775	0.793	0.793
Regional unemployment^a												
*unemployed	0.032	0.009***	0.022	0.010*	0.032	0.009***	0.999	0.997	0.997	0.997	0.999	0.999
*early retired			-0.008	0.012							1.012	1.012
*disabled/ill			0.036	0.008***							1.004	1.004
*homemaker			0.004	0.013							1.001	1.001
			-0.005	0.032							0.973	0.973

Table 1. (Continued)

	Depression						Heavy episodic drinking					
	Model 1		Model 2		Model 3		Model 1		Model 2		Model 3	
	B	SE	B	SE	B	SE	OR	OR	OR	OR	OR	OR
Women												
Intercept	3.164	0.113***	3.165	0.112***	3.165	0.113***	0.176***	0.176***	0.177***	0.176***	0.176***	0.176***
Employment status (ref. employed)												
Unemployed	0.775	0.085***	0.822	0.088***	0.798	0.098***	1.192	1.179	1.100	1.254	0.949	1.100
*displaced					-0.079	0.173						
Early retired	0.457	0.055***	0.469	0.055***	0.457	0.055***	0.949	0.943	0.949	0.943	0.949	0.949
Disabled/ill	1.691	0.083***	1.683	0.085***	1.691	0.083***	1.111	1.105	1.111	1.105	1.111	1.111
Homemaker	0.313	0.061***	0.309	0.061***	0.313	0.061***	1.013	0.998	1.012	0.998	1.012	1.012
Regional unemployment^a	0.040	0.010***	0.031	0.011**	0.040	0.010***	0.984	0.986	0.984	0.986	0.984	0.984
*unemployed			-0.015	0.015								1.007
*early retired			0.036	0.010***								0.996
*disabled/ill			0.023	0.016								1.005
*homemaker			0.004	0.010								0.989

Notes: Controlled for age, migratory status, partner status, education, household wealth and community.

^aGrand mean centred.

*p < .050 **p < .010 ***p < .001.

Table 2. The relationship between employment status and (mental) health care and medication use, by regional unemployment rate and displaced versus non-displaced unemployment.

	Psychiatric consultations				Medication use				GP consultations			
	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR
Men												
Intercept	0.123***	0.106***	0.105***	0.106***	0.182***	0.152***	0.152***	0.152***	1.703***	1.631***	1.637***	1.631***
Health indicators												
Depression	1.211***	1.210***	1.210***	1.210***	1.230***	1.230***	1.230***	1.230***	1.035***	1.035***	1.035***	1.035***
Heavy episodic drinking (ref no)	0.759*	0.763*	0.763*	0.755*	0.763**	0.765**	0.765**	0.759**	0.944*	0.945*	0.945*	0.945*
General health									1.201***	1.201***	1.202***	1.201***
Employment status												
Unemployed	1.607***	1.363*	1.403*	1.480**	1.410***	1.184	1.196	1.282*	1.073*	0.984	0.995	0.980
displaced				0.669				0.665				1.013
Early retired	1.613***	1.417**	1.433**	1.418**	1.718***	1.550***	1.544***	1.547***	1.184***	1.087***	1.085***	1.087***
Disabled/ill	3.707***	2.543***	2.533***	2.545***	3.384***	2.380***	2.381***	2.379***	1.629***	1.258***	1.251***	1.258***
Homemaker	1.758**	1.532*	1.359	1.534*	1.552**	1.327	1.207	1.327	1.066	0.948	0.948	0.948
Regional unemployment^a	0.999	0.988	0.970	0.989	1.002	0.994	0.998	0.994	1.004	1.001	1.003	1.001
unemployed		0.974					0.986				0.989	
*early retired		1.035					0.999				0.994	
*disabled/ill		1.029					0.992				1.001	
*homemaker		0.930					0.920				0.998	

Table 2. (Continued)

	Psychiatric consultations				Medication use				GP consultations			
	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR
Women												
Intercept	0.207***	0.159***	0.158***	0.159***	0.297***	0.237***	0.236***	0.237***	2.055***	1.913***	1.911***	1.913***
Health indicators												
Depression	1.221***	1.221***	1.221***	1.221***	1.204***	1.204***	1.204***	1.204***	1.031***	1.031***	1.030***	1.031***
Heavy episodic drinking (ref no)	0.870	0.872	0.872	0.871	0.932	0.932	0.932	0.932	1.035	1.034	1.034	1.035
General health									1.227***	1.226***	1.226***	1.227***
Employment status												
Unemployed	1.366**	1.146	1.170	1.166	1.278***	1.102	1.093	1.073	1.177***	1.060*	1.065*	1.063*
*displaced				0.929				1.092				0.988
Early retired	1.578***	1.378***	1.374***	1.378***	1.582***	1.434***	1.432***	1.434***	1.168***	1.062***	1.060**	1.062***
Disabled/ill	2.826***	2.128***	2.148***	2.127***	2.652***	2.099***	2.102***	2.099***	1.530***	1.179***	1.178***	1.179***
Homemaker	1.396***	1.278**	1.261**	1.278**	1.393***	1.307***	1.300***	1.307***	1.137***	1.048*	1.048*	1.048*
Regional unemployment^a	0.999	0.984	0.990	0.984	1.013	1.002	1.003	1.002	1.016***	1.010*	1.010*	1.010*
*unemployed			0.980				1.003				0.996	
*early retired			0.988				0.991				0.998	
*disabled/ill			0.984				0.995				1.001	
*homemaker			1.008				1.005				1.004	

Notes: Controlled for age, migratory status, partner status, education, household wealth and community.

^aGrand mean centred.

*p < .050 **p < .010 ***p < .001.

To make the odds ratios more comparable across the nested models, y-standardization was carried out, as recommended by Mood (2010). Multiple imputation procedures were performed and the metric independent variables were grand-mean centred.

Results

The results confirm that unemployed men ($b = 0.730$) and women ($b = 0.775$) are more likely to be depressed than the employed, irrespective of the regional unemployment rate and the individual control variables (Model 1, Table 1). Unemployed men ($OR = 1.292$) are also more likely to be heavy episodic drinkers. Furthermore, in Model 1, a main effect of regional unemployment on depression is observed, although not on drinking behaviour. Men ($b = 0.032$) and women ($b = 0.040$) score higher on the depression scale in regions with a higher than average unemployment rate.

When testing the moderation effect of regional unemployment (Model 2), it is found that retired men ($b_{\text{interaction}} = 0.036$) and women ($b_{\text{interaction}} = 0.036$) between 50 and 65 years old are more likely to be depressed in regions with higher unemployment, whereas this is not the case for the unemployed. The main effect of regional unemployment in Model 2, referring now to the reference category for employment status (the employed), remains significant. Therefore, employed men and women are more depressed ($b = 0.022$; 0.031) in regions with a higher level of unemployment. When the reference category is changed to the unemployed, the main effect of regional unemployment for the unemployed ($b = 0.014[0.013]$; $0.011[0.016]$ not shown in tables) is not significant. This means that the depression scores of the unemployed are not significantly associated with the regional unemployment level.

Only among men, do significant internal-interaction effects with the variable ‘displaced versus non-displaced unemployment’ appear. As expected (Hypothesis 2.a), men unemployed due to workplace closure (displaced unemployed) are less likely to be depressed ($b_{\text{main effect}} = 0.810$; $b_{\text{interaction}} = -0.281$) and to be heavy episodic drinkers ($OR_{\text{main effect}} = 1.364$; $OR_{\text{interaction}} = 0.812$), but still more so than the employed (again by changing the reference categories in order to understand the main effect for the displaced workers). The latter supports the causation hypothesis, which assumes that unemployment leads to deterioration in mental health.

Unemployed men and women are more likely to consult a psychiatrist ($OR_{\text{men}} = 1.605$; $OR_{\text{women}} = 1.366$) or GP ($OR = 1.073$; 1.177) and to take medication for depression or anxiety ($OR = 1.410$; 1.278) compared with the employed (Model 1, Table 2). For unemployed men, the higher likelihood of contacting a psychiatrist cannot be entirely explained by their worse mental health ($OR = 1.363$), and the same is true for unemployed women with regard to GP consultations ($OR = 1.060$) (Model 2). By contrast, unemployed men’s higher frequency of contacting a GP and unemployed women’s psychiatrist consultations – and for both, their medication use – can be ascribed to their worse mental health (Model 2). In accordance with a previous study (Buffel et al., 2014), men with heavy alcohol consumption are less inclined to seek medical care and to use medication, while poor general health and depressive symptoms are highly related to greater medical services use.

Only among women, there is a significant main effect of regional unemployment. In regions with a high level of unemployment, women will more frequently contact a GP

(OR = 1.016; Model 2), also irrespective of their mental and general health (OR = 0.010; Model 3). As hypothesized, the relationship between unemployed men (versus employed) and the number of GP consultations is weakened by the regional unemployment level. Unemployed men (OR_{interaction} = 0.989) have fewer GP consultations in regions with high unemployment than in regions with a lower unemployment level, taking into account actual mental and general health (Hypothesis 1.b).

In the last models, it can be observed that – again only among men – it matters whether the unemployed are displaced or non-displaced, whereas the positive relationship between medical care use and women's unemployment does not differ significantly according to the reason for unemployment. As hypothesized, male displaced workers (OR = 1.282–0.665) are less likely to take medication than the non-displaced (OR = 1.282), irrespective of their actual mental health status (Hypothesis 2.b). The main effect of unemployment (compared with employment) is significant in Model 4, as here it refers to the non-displaced unemployed. In short, only the medication use of the male non-displaced unemployed cannot be ascribed completely to their worse mental health status.

Discussion

The aim of this study was to test the social norm effect of unemployment on mental health, as well as on mental health care and medication use. By relying on the SHARE data, there was the opportunity to do this by using regional unemployment rates as proxy for the social norm of unemployment and via an alternative approach, by distinguishing between the displaced and non-displaced unemployed.

Before discussing the main findings, some weaknesses in the study should be noted. The first, and common, limitation in the field concerns the temporal order of the employment status, health and professional care use indicators. Unfortunately, even the longitudinal panel design of the SHARE cannot solve this problem, as the time span between the second and the fourth wave is too long (3–4 years). In addition, wave three of the SHARE (SHARELIFE) does not contain information about depressive symptoms. It does contain information about the duration of unemployment, but this information is only available for respondents who had also participated in the first or second wave. Accordingly, this study was not able to test potential habituation effects; as has been done in previous work (Clark et al., 2008; Oesch and Lipps, 2013; Winkelmann, 2014). However, those studies show that these effects are rather weak.

The second limitation concerns the direction of the relationship between employment status and mental health. The possibility of reversed causality biasing the results cannot be ruled out. First, a displaced worker approach is used, which is a commonly recognized strategy to partially tackle this issue (Schroder, 2013; Winkelmann 2014). For some minor concerns related to the displaced worker approach, the discussions of Eliason and Storrie (2009a) and Schmitz (2011) can be referred to. To further reduce the impact of selection effects, the relevant confounding factors are controlled for and people who were inactive due to illness or disability are excluded from the category of the unemployed (Beland et al., 2002). It remains possible that even if initial job loss is not caused by health problems, selection bias can occur because unemployment may have a detrimental impact on health (Paul and Moser, 2009), and subsequently may make finding a new job more difficult (Stewart, 2001). Nevertheless, the meta-analysis by Paul and

Moser (2009) shows that mental health selection effects on unemployment and on subsequent job search are weak.

Putting aside these limitations, this study does offer some important findings. First of all, evidence is found for the causation hypothesis, as both the non-displaced and the displaced unemployed are more likely to be depressed than the employed. Given that selection bias is minimal for the unemployed due to workplace closure (Schroder, 2010, 2013; Strully, 2009), this finding confirms that as the financial situation of respondents has been taken into account, unemployment captures not only the loss of income, but also several socio-psychological factors, such as a loss of status and self-esteem, social isolation and the lack of time structure (Bartley et al., 2006; Jahoda, 1981). These lead to a deterioration of mental health.

Second, only the number of GP consultations of the unemployed men depends on the regional unemployment level. As hypothesized, being unemployed in a region with low unemployment triggers the unemployed men to have more contact with a GP than being unemployed in a region with high unemployment, irrespective of their mental and general health status. In accordance with Oesch and Lipps' study (2013), the relationship between unemployment and mental health, in terms of depressive symptoms and problem drinking, does not vary significantly across levels of regional unemployment. As a possible explanation, Oesch and Lipps (2013) refer to the opposite impact of a high unemployment rate, in that in regions with high unemployment, the duration of unemployment may be longer and the prospects of finding a new job very poor, especially during a recession. Therefore, the contrasting effects of a high unemployment rate on the relationship between unemployment and mental health could neutralize each other. Another explanation could be that 'region' is not a particularly adequate reference group, as non-geographical reference groups may possibly be more suitable. 'Spatial neighbours are not always social neighbours' (Wilkinson and Pickett, 2007). It is also possible that individuals choose their reference groups wisely, for instance the unemployed do not engage in 'unhealthy' upward comparisons (Prag et al., 2014), by comparing themselves with the employed, because they would feel less capable and more different from the norm. Other researchers (Stam et al., 2015) encourage the use of more direct measurements of the social norm of unemployment to obtain insights into the processes of social comparison, stigmatization and social exclusion.

In contrast to the unemployed, it seems that the region people live in matters for the employed and early retirees. The employed are more depressed in regions with high unemployment rates. As a result, the mental health gap between the unemployed and the employed has shrunk, but only due to higher levels of depression among the employed in regions with a high level of unemployment. This may be explained by higher perceived job insecurity (Dixon et al., 2013; Esser and Olsen, 2012), feelings of guilt, higher work load in the shrinking sectors, and/or fewer alternative job options for the employed (Benach et al., 2014; Buffel et al., 2015c; Clark et al., 2010). The results also reveal that retired men and women between 50 and 65 years old are even more depressed in regions where unemployment is higher. People who retire before the age of 65 can be considered as a specific subgroup that is probably more vulnerable to the recession; possibly a group of discouraged workers whose presence indicates a form of hidden unemployment. They are no longer on the labour market, because their chances of finding work are low, given their age and the high local unemployment rates. As a result, they may depend on a small

replacement income, be more insecure about their future and be vulnerable to economic instability, all of which leads to more depressive symptoms. Selection effects could also be at work as in regions with high unemployment the older and less productive employees are perceived as too costly and are therefore pushed out of the labour market into retirement. They also may not be eligible for disability benefits, possibly because rules about accessing social security have become stricter as a response to the crisis (Blomqvist et al., 2014).

Third, with regard to the alternative application of the social norm of unemployment theory, both hypotheses are confirmed among men. The mental health effects of unemployment, in terms of depression and problem drinking, are less severe if unemployment is the result of a workplace closure. In line with Clark's study (2003), this social norm effect only occurs among men. Male displaced workers suffer less from their unemployment status than the other unemployed, possibly because of shared experiences among colleagues and because of less stigmatization. They may more easily attribute their labour market situation to structural factors, which makes them feel less responsible, and hence does not reduce their self-esteem (Winefield et al., 1992).

Fourth, the male displaced unemployed also use fewer antidepressants and anxiolytics than their non-displaced unemployed counterparts. This is mainly related to their better mental health. Nevertheless, the non-displaced unemployed still have a higher medication use than expected based on their actual mental health. Based on the social norm theory, this can be seen as an indication that non-displaced unemployed men feel more stigmatized and make internal attributions for their unemployment. They perceive their unemployment status as a personal failure, which may trigger medication use as an individualized coping strategy. This finding, whereby a non-medical problem – such as unemployment – is individualized and treated by medication, is a clear indication of the medicalization of unemployment (Buffel et al., 2015a, 2015b).

In sum, while Clark et al. (2010) point to the importance of high and low levels of labour market security (job security among the employed and ease of finding a new job for the unemployed), when trying to test the social norm effect of unemployment, the current study focuses on the unemployed, and its contribution lies in stressing the importance of the distinction between the displaced and non-displaced unemployed when modelling the social norm effect.

Conclusion

The aim of this study is to advance our understanding of the role of unemployment in people's mental health and consequently seeking professional health care. To further our understanding of the social norm effect of unemployment we need to go beyond comparing across regions with different unemployment levels. The regional unemployment level seems to be a more relevant indicator of labour market conditions for the employed and the retired, rather than the unemployed, especially during a recession. One alternative approach is to distinguish between the displaced and the non-displaced unemployed, which, in the present study, is a step in the right direction, especially among men. Simultaneously, this approach can provide more convincing support for the causation hypothesis of unemployment.

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