The social distribution of depression in Belgium: A comparison of the Belgian Health Interview Survey 2001 and the Panel Study of Belgian Households

by

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Abstract

Although depression is considered the most common mental disorder, knowledge on its social distribution in the general population in Belgium is still limited. In this paper focus is on risk factors for depression in two representative samples of adults in Belgium, aged 16 or more. In the cross-sectional Health Interview Survey of 2001 (N=9413), the Symptom Checklist 90 depression scale is used to measure depressive experiences in the week prior to the interview. In the longitudinal Panel Study of Belgian Households (N in wave 1=8741), depressive symptoms experienced in the past three months are assessed using the Health & Daily Living Form – Global Depression Scale. Risk factors considered are gender, age, household type, urbanization, educational level, labour

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market position, home-ownership and income poverty. Logistic regression results show the general risk factor pattern for severe depressive experiences to be quasi similar in both surveys: higher prevalence rates are found for women, singles (with or without children), the lower educated, the unemployed, sick/disabled individuals, renters and income poor. There was no association with urbanization. Concerning age, no association was found in the Health Interview Survey, while elderly adults in the panel were less likely to report depressive symptoms. The quasi similar risk pattern found in both surveys shows that severe depressive complaints, experienced in several different forms, are distributed unequally among social groups in the general adult population in Belgium.

Introduction

Although Belgium has the second highest suicide rate in Western Europe (1) and the use of prescribed anti-depressants, tranquillizers and sleeping pills is enormous (2), epidemiological knowledge on the prevalence, incidence and risk factors of depressive disorders in the general population in Belgium is limited.

Epidemiological insights into the prevalence of depression in the general population in Belgium up to now, come from the Depression Research in European Society (DEPRES)-data gathered in the mid 1990s, and the European Study of the Epidemiology of Mental Disorders (ESEMeD)-survey organized during the period 2001-2003. In the first project, the six month prevalence of depression in Belgium, as assessed by the Mini International Neuropsychiatric Interview (MINI), was 12.2% (3, 4). Based on the Composite International Diagnostic Interview (CIDI), the ESEMeD-results estimated the one-year prevalence of mood disorders (major depression disorder and dysthymia) at 5.0% in the six countries taking part in the project during the period considered (5). In the latter project, no prevalence rates for Belgium as such have been reported. The same holds for the risk factors identified. In the general adult non-institutionalised population in Europe, unadjusted odds ratios pointed to higher rates of mood disorders in women, younger age groups, the never and the previously married, the less educated, unemployed and sick and disabled. In order to assess the net effect of all the risk factors considered, the Belgian ESEMeD-sample might be too small as a basis for robust multivariate analysis, since sample size is limited to 2419 respondents aged 18 or more, while the prevalence rate for

major depression and dysthymia in Europe was estimated at a low 3.9% and 1.1% respectively.

Accurately assessing whether the main risk factors for depression identified in international psychiatric and social epidemiology are also relevant in the Belgian context, is however possible on the basis of two large scale representative community surveys, namely the Health Interview Survey (HIS) organized in 2001 (6), and the Panel Study of Belgian Households (PSBH) that gathered information on a yearly basis during the period 1992-2002 (7).

Insights into the social distribution of depression based on the PSBH have been gathered recently. Based on a (largely bivariate) variance analysis of data of the seventh panel wave, Bracke and Wauterickx (8) concluded that in 1998 mean depression scores were higher for women (especially in the Walloon region), for younger age categories, for divorced/separated individuals, for men in hierarchic lower placed professions and for students. Some of these results echo former ana-lyses by Bracke (9, 10) based on earlier waves op the PSBH. But as Bracke and Wauterickx (8) have clearly stated, replication of the risk factor pattern for depression found in the PSBH-wave of 1998, is a precondition for firm conclusions about social inequality in depression in the adult population living in Belgium.

In this paper we address this replication test by focussing on the social distribution of depression in the general population in Belgium, based on a comparative analysis of the same risk factors in the PSBH with the information gathered in the cross-sectional health survey of 2001. Instead of focussing on one observation year of the PSBH, we pool all information of the first eight waves of the panel. This pooling procedure has the advantage of optimizing the use of information on all adults taking part in the panel, but it also avoids the increased risk of atypical information gathered during one specific panel wave. Using (pooled) multivariate logistic regression and focussing on the most severe depressive experiences, we consider eight specific risk factors, namely gender, age, household type, urbanization, education, labour market position, home-ownership and income poverty.

Methods

Data

The Health Interview Survey (HIS) of 2001 is the second national health survey to be organized in Belgium and the first to contain

subscales of the Symptom Checklist (SCL)-90 (6). The survey, representative of individuals in private and collective households, is based on a multistage stratified cluster sample (5530 households; 12,770 individuals) which has the aim to inform on the physical and mental health status of the general population and the use of preventive and curative health care. Individual and household characteristics are assessed using a household questionnaire administered to the reference person, and a verbal and written questionnaire administered to maximum three other household members. Members who are in psychiatric care during the time of the survey are not contacted. Information on mental health complaints was gathered for 9413 adults (i.e. 15 years or more). The use of proxies was not allowed. Correction for sampling design and non-response is done using weighting procedures during analysis.

Risk factors for depression are also assessed using the Panel Survey of Belgian Households (PSBH), which is a panel, representative of the population in private households (7). Respondents in the panel are contacted on a yearly basis during the period 1992-2002. Information is gathered by face-to-face interviews on a variety of socioeconomic and family-related topics. Household information is given by the household reference person, while all household members aged 16 years or more are interviewed individually. The initial sample consists of 4439 households and 11565 individuals of which 8741 adults. Adults and children in the original 1992 households or who are descendents of members of those households are followed during the course of the panel if they form or join a new household. Selective attrition of PSBH-respondents is corrected for by weighting procedures during analysis. The attrition rate between panel waves varies around 10%. De Keulenaer and Levecque (11) found that depression did not increase the risk of noncontact or refusal to participate in the ten waves following the initial one. The weighting coefficients implemented during analysis correct for the selective nonresponse found for other characteristics such as income, education and household type. In the following analysis, we optimize the use of information by pooling the cross-sectional data on all adults ever taking part in the first eight waves of the panel (later waves are not considered since not all necessary information on risk factors is available).

Depression

In the health survey of 2001, depression is measured using the relevant subscale for depression of the SCL-90, a self-report instrument indicating general psychopathology in adolescents and adults (12, 13).

The depression scale consists of 13 five-point Likert type items inform-ing about psychological and physical symptoms hindering the respondent during the week prior to the interview. Recent research done by Levecque and Schotte (14) confirmed the validity and reliability of the SCL-subscale for depression for research in the general population in Belgium, and stressed the high correlation with both the SCL-anxiety scale and the General Health Questionnaire (GHQ)-12.

In the PSBH, depression is measured by a shortened version of the Global Depression Scale in the Health and Daily Living Form (HDLF) (15). Initially, the HDLF-scale consists of 18 five-point Likerttype, but in the PSBH only 16 items were administered, all asking about depressive complaints during the previous three months. In the present analysis information on 13 items was used[1]. Moos and colleagues have shown the scale to have adequate performance (15, 16) and to be strongly correlated with the widely used Beck Depression Inventory (16, 17). Additional analysis for the Belgian panel survey underlines the validity and reliability of the used depression scale. Concerning validity, confirmatory factor analysis with varimax rotation in the initial wave of the panel reveals the same hierarchical factor structure as in the original HDLF-inventory reported by Moos and colleagues (15): a psycholo-gical/cognitive factor and a somatic/behavioural factor. Model fit, as indicated by NNFI=0.90 and CFI=0.92, is adequate. Concerning reliability, cross-sectional Cronbach alpha varies between 0.88 and 0.90 in the first eight waves of the PSBH, the mean inter-item correlation varies between 0.36 and 0.41, while the mean item-total correlation is between 0.56 and 0.61. All these indicators reveal excellent reliability.

The depression scales in both surveys, do not refer to depression as a disorder, but as a clinical syndrome that can be assessed in the general population and in patients studies. Neither instruments are

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[1] The items included in the analysis were: feeling depressed (sad or blue), poor appetite or weight loss, trouble sleeping, loss of energy/fatigue/tiredness, been unable to sit still, feeling guilty/worthless/down on yourself, not being able to concentrate, crying, feeling negative or pessimistic, brooding about unpleasant things, feeling irritable, need-ing reassurance and feeling sorry for oneself. The item 'thoughts about suicide or thoughts about dying' is excluded in the present analysis in order not to jeopardize longitudinal comparability: in the initial wave it was asked as one symptom but then replaced by two separate items 'thoughts about dying' and 'thoughts about suicide'. Secondly, an item ask-ing for the physical complaints was omitted in our analysis due to dubious validity (see also Bracke, 1998). Finally, we excluded the item 'strange thoughts' since it reflects a poor translation of the complaint 'feeling inadequate' in the original HDLF-inventory and is as such no criterion for major depression in DSM-IV-TR or ICD-10.

designed to be used as diagnostic intruments but intend to tap the intensity or severity of depressive experiences (12, 13, 15). Because our interest is on risk factors for more serious depressive experiences, we categorise each scale by a 90%-threshold, indicating the 10% highest scores from lower ones. In the rest of our analysis we indicate a score above this threshold as a depression.

Risk factors

Sociodemographics considered are gender, age, household type and urbanization. Instead of marital status, we consider the actual household type since it can be assumed that the presence of other household members is more important for one's mental health than one's legal status. Household type in our analysis is assessed by combining information on cohabiting status with a partner and the prevalence of dependent children. Urbanization is assessed on the basis of a typology that combines information on morphological and functional characteristics (18). As for the socioeconomic risk factors, we test the significance of educational attainment and labour market position, both individual level characteristics and home-ownership and income poverty, both household level indicators. Income poverty is measured as conventional in European poverty research, namely as an equivalent income level below 60% of the median population income (19). The income information used in both surveys is comparable and reports the usual net monthly household income as estimated by the reference person of the household. Adjusting for differences in the size and composition of households is done by implementing the modified OECD-equivalence scale which attributes a weight of 1 to the first adult, 0.5 to each additional adult and 0.3 to each child younger than 14 years of age.

Analysis

In order to optimize comparability of both surveys, we restrict our analysis to the population aged 16 years or more. The analysis procedure followed is weighted logistic regression. Significance of the individual indicators is based on the Wald χ^2 (Homer & Lemeshow, 1989). In the analysis based on the pooled PSBH-data, we report robust standard errors, meaning that we take the temporal autocorrelation or dependence of the observations into account (see also 20). If clustering of observations is ignored, pooling leads to standard error estimates that are biased downwards and test statistics that are biased upwards (21). For the overall goodness of fit of the models, the Likelihood ratio χ^2 test is presented (22). We also report the Nagelkerke R^2, a measure which varies between 0 and 1 and is based on the same rationale as the

Table 1. Depression in the adult population in Belgium, 1992-1999 (PSBH) and 2001 (HIS) (weighted OR, 95% BI and sign. χ^2)

	HIS (2001) N=7587				PSBH (1992-1999) N=46586		
	OR	95%-BI	P> χ^2	OR	95%-BI	(P> χ^2)
Sociodemographic risk factors						
Gender			***			***
Male	-	-	-	-	-	-
Female	2.14	(1.83-2.51)		2.63	(2.34-2.95)	
Age			n.s.			***
16-25	-	-	-	-	-	-
26-35	1.34	(0.94-1.91)		0.95	(0.79-1.13)	
36-45	1.19	(0.82-1.71)		0.98	(0.81-1.18)	
46-55	1.42	(0.99-2.04)		0.86	(0.70-1.06)	
56-65	1.21	(0.80-1.82)		0.51	(0.39-0.67	***
66-	1.69	(1.08-2.64)	#	0.46	(0.34-0.62)	***
Household type			**			***
Single, no children	-	-	-	-	-	-
Single, with children	0.78	(0.54-1.12)		1.23	(0.98-1.55)	
Couple, no children	0.66	(0.54-0.80)	***	0.73	(0.62-0.87)	**
Couple, with children	0.62	(0.48-0.80)	**	0.71	(0.60-0.84)	***
Other householdtype	0.70	(0.54-0.90)	**	0.83	(0.69-1.01)	
Sociospatial risk factor						
Urbanization			n.s.			n.s.
Urban	-	-	-	-	-	-
Semi-urban	1.15	(0.97-1.37)		0.90	(0.79-1.01)	
Rural	1.15	(0.95-1.39)		0.95	(0.83-1.10)	
Socioeconomic risk factors						
Educational level			***			***
None/low	-	-	-	-	-	-
Middle	0.67	(0.55-0.81)	***	0.81	(0.71-0.92)	
High	0.61	(0.49-0.75)	***	0.68	(0.59-0.78)	***
Still studying	1.11	(0.73-1.70)		1.04	(0.81-1.33)	
Labour market position			***			***
Employed	-	-	-	-	-	-
Unemployed	2.15	(1.62-2.85)	***	1.29	(1.10-1.52)	
Retired	1.21	(0.88-1.68)		1.41	(1.12-1.80)	
Sick/handicaped	5.08	(3.62-7.14)	***	4.64	(3.56-6.05)	***
Other inactive	1.03	(0.78-1.36)		0.94	(0.78-1.12)	
Home-owner						
Yes	-	-	-	-	-	-
No	1.32	(1.12-1.56)		1.17	(1.05-1.31)	
Income poor			n.s.			
No	-	-	-	-	-	-
Yes	1.11	(0.90-1.37)		1.14	(1.00-1.30)	

(#p<0.05   *p<0.01   **p<0.001   ***p<0.0001)
PSBH: Model fit: LR=31632.76,   df=21,   p<0.0001 - R^2:0.08
HIS: Model fit: LR=394.25,   df=21,   p<0.0001 - R^2:0.10

conventional R^2 in linear regression. It cannot, however, be interpreted as an indication of explained variance (23).

Results

Decades of epidemiological research and clinical practice have shown that the risk for depression is influenced by several biological, psychological, sociodemographic, socioeconomic and even spatial factors. In Table 1 we assess the association between gender, age, household type, urbanization, educational level, labour market position, home-ownership and income poverty.

Sociodemographic risk factors

Gender

The odds ratios in Table 1 show that the prevalence of depression is 2.14 to 2.63 times higher in the female population in Belgium compared to males. This finding is consistent with international literature on sex differences in depression in psychiatric and in general populations (8, 14, 20, 23, 24). A recent review of explanatory frameworks for this association is given by Piccinelli & Wilkinson (25).

Age

Within research on depression, the risk factor age shows a far less consistent picture than that of gender. Classically, depression is thought to be more prevalent in middle aged persons and in the elderly (26), but more recent empirical evidence contradicts this view (27-29), stating that the association between age and depression could be ∪-shaped (30) or even ∩-shaped, in the last case rendering middle aged individuals more prone to depression (3, 24).

The findings for Belgium in Table 1 add to the inconsistent picture just reported. In the case of the national health survey, no significant association between age and depression was found. If one could detect a pattern in the odds ratios, it is one in which the elderly show more depressive complaints than individuals in the youngest age group. This is contrary to both the DEPRES- and ESEMeD-results for the general non-institutionalized population in Europe (3, 5), that report lower levels of depression in older age groups. In Table 1 we see this latter picture confirmed by our findings based on the PSBH (see also 8, 20, 31, 32). Depression rates are found to be especially low for individuals aged 56 or more, a finding which is consistent with the results from the wellknown NEMESIS-project in the Netherlands (24).

Household type

Next to gender and age, marital and cohabiting status are often reported as significant risk factors for stress-related syndromes as generalized anxiety and depression (33). Usually, higher prevalence rates are found to be associated with divorce or becoming widowed, while living with a partner would be protective (26, 34, 35). Explanations for these associations can be broadly divided into two: health selection and social causation. The former suggests that unhealthy people are less likely to get married, more likely to suffer a marital breakdown and less likely to remarry than healthy people. The social causation arguments have a number of dimensions including that married people experience a health advantage because they have better access to material resources and social support; are less likely to indulge in unhealthy or risky behaviours; and, are protected from stress by their social role. However, very little of the literature on marital and cohabiting status and mental health distinguishes between those people who have children and those who do not or, if it does, it often focuses on the role of children for married people because of the small numbers of lone parents (35). In our analysis we opt to focus on the actual household type in which individuals live, thereby combining information on marital and cohabiting status with the presence of dependent children. This perspective brings about a five-fold typology.

In line with the international picture, our findings show that individuals in Belgium living in a household with two partners experience significantly less severe depressions than singles (see also 8, 20). The odds ratio varies between 0.62 and 0.73. Children's presence has a very small, but additional positive effect in these households on the overall prevalence of depression. In the case of households in which the reference person is not cohabiting with a partner, the presence of children does not add to or decrease the risk of experiencing depressive symptoms. This finding is contrary to several studies in other western countries, where the prevalence of depression is often found higher in one-parent families than in singles (24).

One possible reason for this observed differentiation in prevalence rates across studies might be design related and dependent on the fact whether only one or several household members participate in the sample (as in the case of the Dutch NEMESIS-survey and the Belgian HIS 2001project respectively). In the latter case, it is possible that higher depression rates in single parents as compared to singles without children, are masked during analysis since lower depression rates in the dependent children might reduce the overall odds ratio. In their analysis

of the incidence of depression in the first 10 waves of the PSBH, Dewilde, De Keulenaer and Levecque found some evidence based on household position which is in line with this reasoning (20). Results revealed that single parents had in fact a significantly higher risk of becoming depressed in comparison to singles (OR=1.30), while children in one-parent families showed no significantly increased risk (OR=1.09).

Another explanation for the finding that depression rates in Belgian one-parent families are not higher as compared to singles might be the control of several sociodemographic and socioeconomic factors in our model, thereby excluding higher prevalence rates of depression which simply mirror the fact that more single parents are women living in disadvantaged socioeconomic circumstances. In some of the studies reporting higher prevalence rates in one-parent families, only gender and age are controlled for (e.g. 24).

Urbanization

Urbanization can in itself be a risk factor for the mental health of individuals. This has long been recognized and explained in terms of social and geographical selection processes (drift hypotheses) or in terms of stressors (breeder hypotheses) (36, 37). At this moment, the dominating view within epidemiology is that there is more psychiatric morbidity in urban areas in Europe and the United States (38), than that differentiation is lacking (39), or that psychiatric problems are more prone in rural areas (26). According to Peen and colleagues (40) the association between morbidity and urbanization is largely determined by cultural, temporal and spatial factors. The association may also be different according to the specific syndrome studied. The Dutch NEMESIS-survey for example, has shown that mood disorders are less prevalent in rural areas than in urban settings, but no such association was found for anxiety (24).

As Table 1 shows, the prevalence of depression in Belgium is not significantly different for urban dwellers than individuals living in semi-rural or rural areas. This finding is consistent with analysis results for the general population in Belgium reported by Hulselmans and Levecque (41) reflecting mental health problems as indicated by the General Health Questionnaire (CGH)-12.

Socioeconomic risk factors

Mental health research has been stressing the significance of socioeconomic risk factors for depression for several decades (42-45) and

usually prevalence rates are found to be higher at the lower end of the social ladder, an association which is explained in terms of social selection or social causation processes (43, 46). In epidemiology, the latter models are dominant and explain depression as a result of an uneven distribution of psychosocial stressors or by the differential impact of stressors on mood (47). The stressors referred to in epidemiological literature are acute life-events or chronic strains (48, 49). In community studies, the differential impact of stressors on mood is usually explained in terms of mastery and coping processes or in terms of social support (45).

In our analysis we look at socioeconomic status in terms of four indicators: educational level and labour market position, home-ownership and income poverty. The first two refer to the individual socioeconomic position, while the latter two indicate the position on the social ladder taken up by the household of the individual.

Educational level

Consistent with international research (5, 24), but contrary to the findings of Bracke and Wauterickx (8) based on mean depression scores, our findings in Table 1 report a significant decrease of depressive complaints in individuals with higher educational levels as indicated by the degree or diploma obtained. Individuals in Belgium who are lacking any formal degree or who have only a low educational level, report more severe depressive complaints both in the health survey and the pooled PSBH-sample. Another finding contrary to the risk factor pattern reported by Bracke and Wauterickx (8) concerns students. According to our multivariate analysis reported in Table 1, students do not form a specific risk group for severe depressive complaints (see also 31).

Labour market position

In addition to educational level, labour market position has its own net effect on the risk of depression. As Table 1 shows, depression in Belgium is more prevalent when unemployed or dependent on sickness or invalidity funds, than in paid employment (see also 31). This pattern is again consistent with international epidemiological findings (5, 26, 50). One recurrent explanation for a higher risk for depression in the unemployed is the so-called personal agency-model, which refers to deprivation due to income loss (51). Another points to the latent functions of employment, such as identity and self-fulfillment, social contacts and social status, and structuring of daily activities (the so-called latent deprivation-model) (52). One possible explanation for the higher risk of stress-related syndromes in individuals living on sickness or invalidity funds,

might be sought in the temporary or permanent difficulties or impossibility of performing one's job adequately. This may be due to the stress-related syndrome as such, to other psychological or psychiatric problems (3), or to additional physical diseases such as cancer (53, 54).

Concerning the risk of depression in the retired population, the increased rate of depression was only significant in the panel. This inconsistency in the findings for the two Belgian samples is probably related to the found difference in age-effect. The fact that elderly individuals in the health survey showed more depressive complaints as assessed by the SCL-scale, may temper the significance of retirement status as a risk factor in our multivariate model. In the panel the elderly showed a decreased risk of depression, leaving explained variance to be taken up by the retirement status. Increased prevalence rates of depression in the elderly retired population have been reported in several other western countries, such as the Netherlands (24). It is however contrary with the ESEMeD-project based on unadjusted odds ratios for the general non-institutionalized population in Europe (5). The main conclusion there was no increased prevalence of anxiety or depressive symptoms in the retired population as compared to employed individuals.

Home-ownership

If home-ownership as yet another aspect of socioeconomic status is considered, then Table 1 indicates that even when there is still mortgage to pay, the risk of severe depressive symptoms is decreased when housing is not dependent on the social or private housing market (see also 55). However, home-ownership is more than an imperfect indicator for socioeconomic status, since the association remains significant after controlling for the other socioeconomic factors. An alternative explanation is that home-ownership might be an indication of ontological security (56), of identity (57), of perceived locus of control (58), but also of social support networks (59). Other explanations might refer to specific physical aspects of the house, such as material housing conditions or neighbourhood characteristics, which can be directly health damaging or health increasing (60, 61). From yet another perspective, the association between home-ownership and depression might be explained in term of social selection processes (55).

Income poverty

The final socioeconomic risk factor considered, poverty, plays a prominent role in the explanatory frameworks considering the association between socioeconomic status and mental health. The same is true

for its social and psychological sequelae (62). Usually, it is argumented that poverty structures the material and social conditions of everyday life, by limiting the access to the fundamental conditions of health, such as adequate nutrition, adequate living conditions and social participation.

However, poverty can be conceptualized and measured in several ways (see 63), thereby stressing different aspects of a complex and multidimensional reality. Depending on the stressed aspect, the observed association with depression is different (32). In their analysis of risk factors of depression in the PSBH, Bracke and Wauterickx (8) operationalized economic insecurity by means of two indicators, namely 'making ends meet' and what they call 'a more objective estimate of the value of all goods and capital of the household'. For both indicators they found higher mean depression scores when PSBH-respondents in 1998 experienced difficulties in making ends meet or had less assets.

As information on making ends meet is highly subjective and based on a comparison of different forms of income and expenditures within several contexts of social roles, life styles and goals, its validity as an indicator for poverty or objective economic insecurity is often doubted (64-66). Especially in European poverty research, the low correlation between making ends meet and a low income has often been reported. For the PSBH, for example, analysis shows that in the first eight waves of the panel, only 32.1% to 40.2% of the individuals reporting difficulties to make ends meet, live under the European income poverty line, as assessed by an income less than 60% of the median (national) population income (Pearson R=0.23 to 0.33; p<0.0001). In the health survey 2001, we found this to be the case for 37.1 % of the individuals (Pearson R=0.29; p<0.0001).

When poverty is assessed as low income, then both the PSBH-panel and the health survey show a small net-increase in the risk of depression in the Belgian context (see also 31, 32, 46). The odds ratios vary between 1.11 and 1.14, but only in the PSBH the association is still statistically significant at the 0.05-level. In the case of the health survey, the p-value was 0.06 (not shown in Table). The difference in significance may be due to the larger sample size of the panel as a result of the pooling procedure. In both surveys the association between income poverty and depression is highly attenuated when controlling for labour market position. This attenuation might indicate that a lower equivalent income might be less determining for one's emotional status once other factors relating to one's socioeconomic functioning is taken into consideration. This is not to state that all forms of paid employment are health increasing, since research by Levecque (46) based on the national health

survey of 2001 has clearly shown that employees living under the income poverty line report more depressive symptoms than employees with a higher income. This finding was explained by referring to the specific sectors and types of job in which people with lower income are employed. These jobs are more often characterised by job insecurity, dangerous or unhealthy working conditions, and a lack of control on task planning and performance. All these factors have been shown to increase the risk of stress-related problems such as anxiety and depression (67).

Discussion

The problem of identifying depression is increasingly recognised as an important health care issue. Depression itself is the most common mental health problem in the general population and has several individual, social and professional implications, most of them negative: substantial patient suffering, stressful or hampered interactions, lowered work productivity and immense health care costs. Studies focussing on the health status of depressed patients underline that depression increases the risk of other mental and physical problems, and the risk of dying (53, 54). In a rough estimation Bayingana, Drieskens and Tafforeau (2) stated that half or two thirds of the people committing suicide in Belgium were depressed in the period of their terminal act. Several other studies show that the suicide rate in Belgium is one of the highest in Europe and that the use of anti-depressants, tranquillizers and sleeping pills is enormous. These facts underscore the importance of reliable and valid screening instruments and data that allow government and health care workers to assess the prevalence and risk factors in the general population. Patient files or registered prescriptions of anti-depressiva are a helpful indication of the prevalence of depression in the general community, but it is distorted by several selection biases. One of these biasses is the fact that patients, their social surroundings, or even primary health care takers do not diagnose, or have difficulty in diagnosing depression in the majority of patients (68).

On the other side, the term depression has gained widespread use in the stressful life of modern men. In everyday language depression does not reflect the depressive disorder diagnosed in clinical settings, but it rather reflects a vague feeling of distress and discomfort, or a syndrome formed by several complaints that are experienced simultaneously. But even as a subclinical syndrome, depressive experiences have to be taken seriously within a clinical context, since they have been shown to be a major risk factor for following clinical depressive episodes (69, 70). Identification of subclinical experiences of depression might therefore be useful in the context of preventive policy.

In this paper, we have focussed on severe depressive complaints as assessed by dimensional depression scales in the Belgian Health Interview Survey 2001 and the Panel Study of Belgian Households (1992-1999). These scales are not intended to tap clinical depression, but to grasp the wide range of severity with which different syndromes of depression can be experienced. Focus in our analysis was on the 10% most severe depressive experiences, as reported by a representative sample of the adult population living in Belgium (aged 16 or more). Our 90%-10% categorization of both depression scales is based on the knowledge that the sixmonth-prevalence of depression in Belgium was recently estimated at 12.2% (3, 4). Another concern was that the prevalence of depression in the analysis would be sufficiently high in order to strengthen the power of the analysis.

Focussing on risk factors for the 10% highest depression scores in both the health survey 2001 and the pooled first eight waves of the PSBH, we found a quasi similar risk factor pattern. This pattern was, in general, consistent with risk patterns identified in international epidemiological literature. Despite important differences between both surveys, such as the sample design, procedures for data collection, used measurement instruments and differences in historical time, both Belgian surveys revealed higher prevalence rates of severe depressive complaints for women, singles (with or without children), the lower educated, the unemployed, sick/disabled individuals, renters and income poor. There was no association with urbanization. Concerning age, no association was found in the health survey, while elderly adults in the panel were less likely to report depressive symptoms. The risk factor pattern sketched was based on multivariate analysis, thereby avoiding a simplified picture of higher depression rates in specific social groups that simply mirror the effect of correlated characteristics.

The fact that both the health survey and PSBH-sample revealed a quasi similar risk factor pattern for depression, enhances our confidence in the robustness of the results. The same conclusion can be drawn from a recent analysis by Levecque (submitted) based on the health survey of 2001, showing that the risk factor pattern for depression was quite similar to the one found for the highly correlated syndrome of generalized anxiety (Pearson r=0.81, p<0.0001, see also 14[2]). Of all eight risk factors considered, only household type showed a divergent

[2] Further evidence for the high prevalence of comorbidity of both syndromes in the general population in Belgium was found during a second order confirmatory factor analysis, showing that anxiety and depressive symptoms in the SCL-scales could accurately reflect a latent anxiety-depression construct.

association: while increased risks for depression are found for singles and one-parent families, no such association was found for generalized anxiety. Finding the same risk factor pattern for depression and generalized anxiety in the general population in Belgium is in line with the well-known international finding that both mood statuses are highly correlated (54, 71, 72), but although comorbidity is highly prevalent in both non-clinical and clinical settings, it should be kept in mind that both syndromes have an independent impact on the burden of mental disorder. In a recent Australian nationwide study for example, Hunt (73) found that the presence of a comorbid depressive disorder in adults, significantly influences the sociodemographic correlates of generalized anxiety disorder but cannot fully explain its presence.

Conclusions

Analysis of both the Belgian health survey 2001 and the first eight waves of the PSBH reveals specific risk groups for severe depressive complaints that can turn into longer-term or clinical depressive disorders. Higher risks are experienced by women, singles or members of a one-parent family, and people at the lower end of the social ladder. Being low educated, unemployed, sick or disabled, renting a home on the housing market and living under the income poverty line are all experiences that increase the risk of feeling several severe psychological and/or somatic depressive complaints simultaneously. The question whether the risk of depressive complaints is different for several age groups in Belgium has not been answered consistently. The PSBH-results showed less depressive complaints in the older age groups, while the health survey revealed no significant association.

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