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Gender differences in common mental disorders : a comparison of social risk factors across four European welfare regimes

Gender differences in common mental disorders: a comparison of social risk factors across four European welfare regimes.

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ABSTRACT

Background: Decreasing gender differences in mental health are found largely in countries in which the roles of men and women have improved in terms of opportunities for employment, education, child care and other indicators of increasing gender equality. In this study, we examine how European welfare regimes influence this association between mental health and the social roles that men and women occupy.

Methods: The EU-World Mental Health data are used, which covers the general population in 10 European countries (N = 37,289); Countries were grouped into four welfare regions: Liberal regime (Northern Ireland), Bismarckian regime (Belgium, Germany, the Netherlands and France), Southern regime (Spain, Italy, Portugal) and Central-Eastern regime (Romania and Bulgaria). The lifetime prevalence of mood, anxiety, and alcohol disorders was determined by using the Composite International Diagnostic Interview (CIDI) 3.0. Overall prevalence rates along with odds ratios by means of bivariate logistic regression models are calculated to compare the presence of common mental disorders in women versus men per welfare regime.

Results: Overall prevalence of common mental disorders is highest in the Liberal regime and lowest in the Central/Eastern regime. The gender gap in mental disorders is largest in the Southern regime and smallest in the Liberal regime. Marital status, and certain employment positions help to explain variation in mental disorders across and within welfare regimes.

Conclusion: Most prominent pathways linking gender to mental ill-health being are related to marital status and certain employment positions. However, these pathways also show substantial variation across welfare regimes.

Key words: Common mental disorders, welfare regimes, gender

Introduction

Decreasing gender differences in mental health are found largely in countries in which the roles of men and women have improved in terms of opportunities for employment, education, child care and other indicators of increasing gender equality.[1-3] Here, we intend to examine how European welfare regimes influence this association between mental health and the social roles that men and women occupy. Welfare regimes influence the conditions in which people work and live, thereby also the social determinants and outcomes of mental health. They also account for how and why the social determinants and outcomes in mental health vary in their effects across institutional settings.[4]

The available studies on the benefits of European welfare regimes for health, has mainly focused on measures of general subjective health[5-9] or life satisfaction.[10-12] These studies find a positive association between welfare generosity and well-being via the mediation of socio-economic position.[13] Welfare regimes can additionally help to explain gender differences in health, specifically through their provision of family policies and services that reduce both the burden of domestic labor and the costs entailed in undertaking paid work.[6,14] Most research finds that Social Democratic welfare states, which include the Nordic countries, have a salutary effect on population health through the generous provision of universal welfare policies, labor market decommodification[7,13], as well as extensive work-family reconciliation policies.[11] In contrast, population health is worst in the Southern and the Central-Eastern welfare states.[5,6]

The available literature that specifically focused on how welfare regimes influence mental health outcomes is limited in scope. In addition, it relies on general distress measures, such as the ICD-10[15], the CES-D[16-18], or the Euro-D.[18] These standard measurement tools capture feelings of depression and anxiety, but to a lesser extent symptoms of substance abuse and violence.[19] Men are much more likely to expose these latter types of symptoms when confronted with stress[20]. As a result, these general distress measures tend to underestimate mental health problems in men[19], which has led to a poor understanding of stereotypically masculine symptoms such as substance abuse and violence.[21]

In the present study we fill this hiatus in the literature by using the European data from the World Mental Health (WMH) Surveys, which assesses a wide range of both female and male stereotypical mental health problems. The data were collected in ten European countries. Using Ferrera's[22] welfare regime typology, we classify eight of these countries into the Liberal, Bismarckian and Southern welfare regime. In line with previous research[5,23], we group the two Central-Eastern countries into a separate welfare regime. Because no data were collected in a Social-Democratic welfare state, this regime was covered in our study. A description of the incorporated regimes in provided in Table 1.

The aim of the current study is twofold. First, we access the prevalence of common mental health problems in men and women. Second, we look at differences across and within welfare regimes in the pathways linking gender to mental ill-health, by examining well-established social risk factors identified in the current literature[1,6,24] such as a vulnerable socio-economic position (measured by income, education, and employment status) and family position (measured by marital status and presence of children in the household).

Methods

Study sample

The EU-World Mental Health (EU-WMH) includes 6 cross-sectional surveys of the adult population participating in the European Study of the Epidemiology of Mental Disorders (ESEMeD) (Belgium, France, Germany, Italy, the Netherlands, and Spain), as well as 4 other surveys with similar methodology, conducted in different countries (Bulgaria, Romania, Northern Ireland, and Portugal).

A stratified multi-stage random sample without replacement was drawn in each country. The target population represented non-institutionalized adults, aged 18 years or older. Questions were administered at home by trained interviewers who used a computer-assisted personal interview, with the exception of Bulgaria where the interview was in paper-and-pencil version. The interview was

conducted in two parts. All respondents were given the same comprehensive questionnaire and were screened for the most common mood and anxiety disorders (Part 1 sample). Only those who presented symptoms of specific mood and anxiety disorders and a random sample of 25% of respondents without these symptoms were asked in-depth questions about additional mental disorders, as well as demographic and lifestyle features (Part 2 sample). No Part 2 sample exists for Romania as these questions were asked in the entire study sample.

Data were obtained from 37,289 respondents, ranging from 2,357 in Romania to 5,473 in Spain. Response rates varied from 45.9% in France to 78.6% in Spain, with an overall response rate of 65.5%. The sample was weighted to take into account different selection probabilities within countries (including the Part 2 sample), and post-stratification weights to restore specific age and gender distributions of the general population in each country. More details on the sampling and response rates are provided in Appendix Table A1.

Mental disorders

The lifetime prevalence of mood, anxiety, and alcohol disorders was determined by using the Composite International Diagnostic Interview (CIDI) 3.0 with diagnostic criteria defined in the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV). Organic exclusion rules were imposed in making all diagnoses. Mental disorders assessed in the EU-WMH survey were the common mood disorders (major depressive episode, dysthymia) and anxiety disorders (panic disorder, specific phobia, social phobia, agoraphobia without panic disorder, generalized anxiety, post-traumatic stress) as well as conduct disorder and alcohol use disorders. Attention deficit disorder was not systematically collected across countries and hence not included in the composite end-point of any major mental disorder (AMD).

Social risk factors

Respondents were asked questions on several demographic variables, including *gender* and *age* at interview. Socioeconomic position was measured by the total years of *schooling* (≥12 or <12 years), *family income,* which was determined in relation to country medians (low, low average, high average, high), and *employment position.* Respondents were asked if they were currently working and if not, for what reason(s). Unemployment was then defined as any person not working, excluding persons retired, on sick-leave or with any other health condition preventing them to work. *Marital status* was assessed by distinguishing married or cohabitating from divorced, widowed and never married respondents. Questions on *family composition* were asked as follows: if at least one child was present in the household, respondents then gave information on their child(ren)'s age (<6, 6-12, 13-17 years old).

Statistical analysis

Countries were grouped into four welfare regions: Liberal regime (Northern Ireland), Bismarckian regime (Belgium, Germany, the Netherlands and France), Southern regime (Spain, Italy, Portugal) and Central-Eastern regime (Romania and Bulgaria).

First, we estimated the overall prevalence levels of AMD by gender and by welfare regime. Next, odds ratios were calculated via bivariate logistic regression models in order to relatively compare the presence of AMD in women versus men per welfare regime. Finally, in order to determine the impact of adding the various social risk factors to the model, as stipulated by our third research aim, an adjusted Wald F-test was performed comparing a model that includes only gender and age, with a model which included gender, age, income level, employment status, education, marital status, and the presence of children in the household. This was done for each welfare regime separately, allowing us to determine whether significant differences between these regimes could be explained by the differences in the socio-economic and family position of respondents within each regime. In addition, a multivariable logistic regression model including these social risk factors was fitted per welfare

regime and gender. Gender-differences in OR were tested for each individual social risk-factor by including an interaction term multiplying gender and social risk-factor. Gender-specific OR and 95%CI were calculated from these models using the *lincom* post-estimation command.

All analyses were performed using STATA statistical software (v12.1, College Station, TX, USA) and significance was defined as a *p*-value < 0.05. The sample was weighted to take into account different selection probabilities within countries, specific age and gender distributions of the general population in each country.

Results

The proportion of male and female respondents with AMD, as well as gender ORs are presented in Table 2. Our results indicate that there is considerable variation among welfare regimes in lifetime prevalence of AMD. Prevalence was highest in the Liberal regime, and lowest Central/Eastern regime. Major depressive episode was the most common mental health disorder in women and men in the Liberal and Southern welfare regime, as well as in women in the Bismarckian regime. Alcohol use disorder was the most common disorder in men in both the Bismarckian and Central-Eastern welfare regime. Specific phobia was the most common mental disorder in women in the Central-Eastern welfare regime. Women reported significantly more mental health problems than men in all welfare regimes, but this difference was more pronounced in the Southern regime, and least pronounced in the Liberal regime. We thus found that both overall levels of prevalence of AMD, as well as the size of the gender difference in AMD varied by welfare regime.

Next, we looked at whether adding a number of well-established social risk factors helped to explain variation in AMD within the welfare regimes. Results, presented in Table 3, showed that certain aspects of both a vulnerable socioeconomic and family position related to the prevalence of AMD. In addition, specific patterns across gender and welfare regime could be noted.

Divorced women were more likely to report AMD than married women in all the welfare regimes, except the Liberal regime. In a similar manner divorced men in the Bismarckian and Liberal regime and widowed men in the Central-Eastern regime were more than twice as likely to report AMD than married men. This association was not established in the Southern regime. Overall, the presence of children is the household did not increase the risk of AMD in the Central/Eastern regime. However, men and women in the Bismarckian regime, as well as women in the Southern regime, were more at risk for AMD when teenagers are in the household compared to those without children in the household.

Next, we examined the association between employment status and the prevalence of AMD. Women in retirement reported significantly more AMD than employed women in the Central-Eastern regime, while in the Bismarckian regime, unemployed women were more likely to report AMD than employed women. In Southern regime, employed women reported significantly more AMD than homemakers. In men, unemployment associates with more AMD in the Liberal and Southern regime, and retirement in the Bismarckian regime. Income as well as level of schooling did not show a significant association with AMD, except in women in the Central-Eastern regime.

Additional analyses (Appendix Table A2) showed that adding these social risk factors to our model, significantly improved the model in all welfare regimes. In fact, when controlling for socio-economic position and family position, the gender difference in AMD disappeared in the Central-Eastern regime and the Liberal regime. In both the Bismarckian and the Southern regime, gender differences in AMD, while decreasing in size, remained significant (p<0.001). Welfare regimes were significant predictors of AMD, with strong positive associations in the Bismarckian regime (OR women: 1.30, 95%CI:1.18-1.44; OR men: 1.26, 95%CI: 1.11-1.43), In the Liberal regime (OR women: 1.53, 95%CI:1.37-1.71; OR men: 1.82, 95%CI: 1.52-2.17) and Southern regime (OR women: 1.27, 95%CI: 1.16-1.38; OR men: 1.09, 95%CI: 0.97-1.22) and a negative association in the Central-Eastern regime

(OR women: 0.51, 95%CI: 0.46-0.57; OR men: 0.55, 95%CI: 0.45-0.66) when compared to the grand mean. Overall, the interaction between gender and welfare regime also appeared significant (p<0.05).

Discussion

Our study compares a wide range of common mental disorders in men and women across four European welfare regimes, additionally examining how these disorders relate to a set of well-established social risk factors . We find that the size of the gender difference in prevalence of common mental health disorders varies across the four European welfare regimes. Overall prevalence of mental disorders was highest in the Liberal regime. In contrast to other studies using a general distress inventory, we established the lowest prevalence rates of AMD in the Central/Eastern regime. However, we also found a larger gender gap in mental health problems in the Southern regime, confirming previous research. Our study contributes to the recent literature that uses a welfare regime framework to explain the distribution of (mental) health across gender.[10,15,17,25,26] Other research has focused on social policy expenditure and specific policies[11,27-30], with most of these studies showing that more generous policies are associated with smaller disparities in health. However, the benefits derived from these social investments may vary by gender. [30]

Welfare regimes differ in terms of labor market decommodification and how the family is approached by the state.[14] The Bismarckian regime is distinguished by benefits that are often earnings related, administered through the employer, and geared towards maintaining existing social patterns. It was traditionally set up to support the male-breadwinner system, with a focus on cash-transfers to households rather than on the direct provision of services, encouraging women to at least partly take up the family and housekeeping responsibilities.[31] In this context, we found that unemployment in women relates to more mental problems in women and retirement with less mental problems in men. In addition, being divorced or separated put both men and women at higher risk for AMD. Entering marriage confers a variety of benefits, namely improved earnings and social well-being; while divorce

has negative effects on subsequent earnings as well as on the mental health of both partners and children.[32] Reversely, a mental disorder may select people into a marital break-up as well.

The Liberal regime offers minimal state provision of welfare benefits and shows a strong reliance on the market. It tends to offer means-tested social programs that are directed mainly toward the working class and the poor. It grants women the time to care for their children by offering financial assistance on the basis of their caring status, though with restrictions based on the child's age, and there is only limited publicly funded childcare. Its low levels of decommodification and defamilisation are reflected in highest overall prevalence rates in both men and women. A higher risk of AMD is particularly pronounced in unemployed men. In line with the Bismarckian regime, both men and women who are divorced or separated are also at higher risk of AMD.

The Southern regime is typified by a fragmented system of welfare provision which consists of diverse income maintenance schemes and with a strong reliance on the family and charitable sector [22]. Generous protection is provided to full-time workers on the official labor market, while no guarantee of a minimum income is provided for those outside the labor market. Care work is taken for granted and female employment is generally low.[33] In the context the familiastic approach of this regime[14], we found that women who stay at home in order to do housekeeping and childcare actually reported less mental health problems than employed women. Married women also reported less mental problems than separated or divorced women. In a similar manner, unemployed men, thereby not living up to the normative standard of the male breadwinner model were at much higher risk of AMD.

Finally, the Central-Eastern regime has experienced extensive economic upheaval and has undertaken comprehensive social reforms over the last decades.[34] It has emphasized the liberal regime approaches of marketization, decentralization and reform of health insurance schemes[35], putting people outside of the job market especially at risk of mental health problems. Along with mass unemployment, many of the social assistance provisions previously distributed through the workplace

as well as public child care arrangements diminished. Women have been viewed as the "losers of the transformation process"[36] since employment among women decreased markedly and women were particularly affected by growing social inequality and poverty. In this regime, retired women reported significantly more mental problems, and again marriage associates with less mental problems.

Limitations

First, as with all cross-sectional data, it is difficult to determine the causal association between risk-factor and mental illness. A particular social condition, such as divorce or unemployment, may increase the risk of a mental disorder; the mental disorder itself however may move the person into a less favorable socioeconomic or family situation. Second, our study did not use clinician-administered interviews, but misclassification induced by this limitation would most likely be minimal. A reappraisal study carried out in four WMH countries demonstrated good agreement between CIDI 3.0 diagnoses and diagnoses based on blinded re-interviews, with between-country ranges of the area under the receiver operator characteristic curve at 0.73-0.93 for lifetime mood and anxiety disorders, and 0.83-0.88 for 12-month mood and anxiety disorders.[37] Nevertheless, diagnoses of externalizing disorders were not validated and might be less accurate than those of other disorders. In addition, the number of externalizing disorders was limited in number. Third, lifetime prevalence rates were assessed with retrospective reports. A sensitivity analysis using the prevalence of common mental disorders during the last 12 months did nevertheless provide similar results. Fourth, years of schooling was reduced to less or more than 12 years of schooling because the questionnaire in France could only ask whether participants passed their baccalaureate exam (i.e. 12 years of education). In order to avoid any misclassification, we applied this cutoff across all countries. Finally, information from the Liberal welfare regime is obtained from only one country, while the analysis does not cover the Social-Democratic welfare regime. In addition, the use of welfare regimes in the study on health disparities

is not without criticism. An overview of these criticism is provided by Bambra.[38,39] These limitations should be considered when interpreting the present results.

In conclusion, our research shows that common mental disorders show variation in their prevalence across gender and welfare regimes. In addition, we showed that marital status, and certain employment positions help to explain this variation. Knowledge about mental health gained through research that ignores the social context might therefore be limited in terms of generalization.

CONFLICT OF INTEREST

KEY POINTS

- Overall prevalence of mental disorders is highest in the Liberal welfare regime and lowest in the Central Eastern welfare regime.

- The gender gap in mental disorders is largest in both the Southern welfare regime, and smallest in the Liberal regime.

- Marital status, and certain employment positions help to explain variation in mental disorders across and within welfare regimes.

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Table 1: Description of welfare regimes included in the analysis.

Welfare regime	Characteristics	Countries included in the analysis
Bismarckian	- Welfare benefits organized as insurance-based schemes to preserve social rights according to status. - Benefits are often earnings related, administered through the employer. - Set up to support the male breadwinner household, with a focus on cash-transfers to households rather than on the direct provision of services.	Belgium, Germany, France, the Netherlands,
Liberal	- Minimal state provision of welfare benefits and strong reliance on the market. - Benefits are modest, means-tested and often stigmatized. - Weak social rights are attached to paid work and to the transition from care-giving to paid work.	Northern Ireland
Central-Eastern	- Experienced a demise of the universalism under the Communist welfare state and a shift towards principles of the liberal welfare regime. - A weakly developed welfare state, providing fragmented, restrictive and less generous benefits in comparison with the other European welfare regimes. - Heavy reliance on the family and charities to augment the financing and delivery of welfare services.	Romania, Bulgaria
Southern	- Characterized by a fragmented system of welfare provision that range from meagre to generous and with high levels of —clientelism. - Strong reliance on the family and charitable sector.	Spain, Italy, Portugal

Table 2. Prevalence of lifetime mental health disorders and its relative difference between men and women in the EU-WMH survey

	Bismarckian			Liberal			Central/Eastern			Southern		
Sample Size	Women	Men	OR (95% C.I.)	Women	Men	OR (95% C.I.)	Women	Men	OR	Women	Men	OR
Part 1	N=6029	N=5211	N=11240	N=2441	N=1899	N=4340	N=4153	N=3522	N=7675	N=7660	N=6374	N=14034
Part 2	N=2835	N=2061	N=4896	N=1164	N=822	N=1986	N=2547	N=2043	N=4590	N=3573	N=2387	N=5960
Any mood disorder*[1]	21.2	11.8	2.01 (1.79-2.26)	22.9	13.0	1.99 (1.68-2.37)	7.0	3.1	2.33 (1.74-3.13)	17.7	8.2	2.42 (2.16-2.71)
Major depressive episode*	19.4	11.1	1.93 (1.71-2.19)	22.6	12.7	2.01 (1.69-2.39)	6.8	3.0	2.33 (1.72-3.15)	16.6	17.7	2.37 (2.10-2.67)
Dysthymia with hierarchy*	3.1	1.8	1.73 (1.26-2.38)	2.3	1.3	1.73 (1.04-2.89)	0.8	0.3	3.00 (1.35-6.66)	2.2	0.8	2.76 (1.92-3.98)
Any anxiety disorder**[2]	19.8	12.5	1.74 (1.43-2.11)	26.3	16.2	1.84 (1.37-2.47)	11.2	5.3	2.25 (1.77-2.86)	18.8	9.4	2.22 (1.83-2.69)
Panic disorder*	2.4	1.6	1.51 (1.07-2.12)	4.2	2.3	1.89 (1.31-2.72)	1.4	0.5	2.83 (1.91-4.19)	1.9	1.0	1.91 (1.35-2.69)
Specific phobia*	11.7	6.0	2.08 (1.78-2.42)	13.2	5.7	2.51 (1.96-3.21)	7.1	3.1	2.43 (1.97-3.00)	9.3	3.6	2.75 (2.38-3.17)
Social phobia*	3.4	2.4	1.43 (1.11-1.84)	7.0	5.0	1.42 (1.13-1.80)	1.3	0.7	1.79 (0.91-3.50)	2.8	1.9	1.51 (1.13-2.02)
Agoraphobia without panic disorder*	1.0	0.5	2.04 (1.21-3.41)	2.0	2.7	1.21 (0.78-1.89)	0.3	0.1	2.84 (0.64-12.68)	1.2	0.4	3.00 (1.98-4.53)
Agoraphobia with panic disorder*	1.5	0.7	2.06 (1.32-3.21)	2.8	2.3	1.22 (0.81-1.83)	0.5	0.1	4.54 (1.12-18.38)	1.6	0.5	3.23 (2.24-4.66)
Generalized anxiety w/ hierarchy*	3.1	2.0	1.63 (0.93-2.85)	5.3	2.9	1.86 (1.28-2.70)	1.7	1.1	1.63 (0.93-2.85)	2.8	1.4	2.05 (1.57-2.69)
Post-traumatic stress**	5.0	1.2	4.44 (3.08-6.40)	11.0	6.4	1.79 (1.16-2.76)	2.2	0.7	3.39 (1.93-5.94)	4.7	1.9	2.53 (1.70-3.76)
Any internalizing disorder[3]	**33.1**	**21.0**	**1.86 (1.58-2.19)**	**36.0**	**23.6**	**1.82 (1.44-2.29)**	**15.9**	**7.6**	**2.31 (1.85-2.88)**	**29.7**	**15.7**	**2.27 (1.95-2.64)**
Attention deficit disorder***	2.3	4.1	0.55 (0.27-1.11)	1.3	5.1	0.25 (0.07-0.89)	0[†]	0.8[†]	-	1.0	1.9	0.54 (0.24-1.19)
Conduct disorder***	2.0	2.1	0.93 (0.41-2.12)	1.3	3.6	0.34 (0.13-0.88)	1.8	0.8	0.22 (0.02-2.15)	0.6	1.4	0.44 (0.22-0.89)
Any alcohol-use disorder**	2.6	11.9	0.20 (0.15-0.27)	1.5	5.4	0.23 (0.18-0.30)	0.5	6.0	0.08 (0.05-0.13)	1.1	9.3	0.11 (0.08-0.15)
Any externalizing disorder[4]	**3.4**	**12.6**	**0.24 (0.18-0.33)**	**6.6**	**22.4**	**0.25 (0.19-0.33)**	**0.4**	**6.5**	**0.06 (0.03-0.13)**	**1.3**	**9.7**	**0.13 (0.10-0.16)**
Any mental disorder	**34.1**	**28.2**	**1.32 (1.13-1.54)**	**38.1**	**36.3**	**1.08 (0.88-1.32)**	**16.2**	**13.0**	**1.30 (1.06-1.58)**	**30.0**	**21.9**	**1.53 (1.32-1.77)**

Data presented are from either the Part 1 (*), Part 2 (**), or Part 2 among participants ≤44 years old (***) samples of the ESeMED survey and separate surveys from Northern Ireland, Bulgaria, Romania, and Portugal.

[1] Any mood disorder includes major depressive episode and dysthymia with hierarchy.

[2] Any anxiety disorder includes panic, specific phobia, social phobia, agoraphobia, generalized anxiety, and post-traumatic stress disorders.

[3] Any internalizing disorder includes any mood or anxiety disorders.

[4] Any externalizing disorder includes conduct and alcohol-use disorder.

[†] Bulgaria does not have data on attention deficit disorder, therefore only data from Romania were included in the prevalence for Central/Eastern countries.

- OR was not calculated since disorder was not present in women and/or men strata

Table 3. Risk-factors for any mental disorder stratified by gender and region

	Women								Men								
	Bismarckian (*n*=2835)		Liberal (*n*=1164)		Central/Eastern (*n*=2516)		Southern (*n*=3572)		Bismarckian (*n*=2061)		Liberal (*n*=822)		Central/Eastern (*n*=2003)		Southern (*n*=2387)		*p* for intxn*
	OR	(95% CI)	OR	(95% CI)	OR	(95% CI)	OR	(95% CI)	OR	(95% CI)	OR	(95% CI)	OR	(95% CI)	OR	(95% CI)	
Age *(per year)*	0.99	(0.98-1.00)	0.98	(0.97-0.99)	1.01	(1.00-1.02)	0.99	(0.99-1.00)	0.99	(0.98-0.99)	0.98	(0.97-1.00)	0.98	(0.97-0.99)	0.98	(0.97-0.99)	0.8¶
Income level																	0.4¶
Low	1.00	-	1.00	-	1.00	-	1.00	-	1.00	-	1.00	-	1.00	-	1.00	-	
Low-average	0.97	(0.70-1.34)	1.13	(0.74-1.73)	1.85	(1.30-2.64)	1.06	(0.81-1.40)	0.88	(0.63-1.22)	0.90	(0.47-1.73)	0.66	(0.32-1.36)	0.57	(0.36-0.91)	0.4
High-average	0.95	(0.70-1.31)	0.92	(0.59-1.45)	1.49	(1.01-2.21)	0.83	(0.63-1.09)	0.88	(0.62-1.25)	1.19	(0.55-2.57)	0.74	(0.39-1.43)	0.72	(0.43-1.20)	0.7
High	0.98	(0.70-1.38)	1.17	(0.73-1.88)	0.77	(0.54-1.11)	0.77	(0.59-1.02)	0.77	(0.53-1.11)	0.94	(0.40-2.18)	1.24	(0.65-2.38)	0.97	(0.59-1.60)	0.8
Employment status																	ntp¶
Employed	1.00	-	1.00	-	1.00	-	1.00	-	1.00	-	1.00	-	1.00	-	1.00	-	
Self-employed	1.41	(0.81-2.46)	0.85	(0.37-1.96)	1.35	(0.59-3.11)	1.23	(0.88-1.71)	1.71	(1.06-2.77)	0.89	(0.25-3.21)	0.77	(0.16-3.82)	0.84	(0.44-1.59)	0.6
Unemployed	2.06	(1.16-3.68)	0.90	(0.26-3.10)	1.27	(0.76-2.10)	1.23	(0.91-1.66)	1.22	(0.74-2.03)	5.58	(1.17-26.60)	2.26	(0.86-5.91)	2.60	(1.15-5.85)	0.2
Retired	1.02	(0.75-1.39)	0.78	(0.54-1.13)	1.61	(1.15-2.24)	1.21	(0.93-1.57)	0.65	(0.46-0.92)	0.84	(0.41-1.72)	0.78	(0.47-1.30)	0.67	(0.39-1.13)	0.8
Homemaker	1.13	(0.81-1.57)	1.05	(0.71-1.55)	0.92	(0.46-1.87)	0.62	(0.48-0.80)	1.46	(0.16-13.14)	2.38	(0.38-14.92)	1.21	(0.33-4.50)	0.75	(0.15-3.60)	0.8
Student	0.92	(0.41-2.11)	1.36	(0.48-3.86)	0.51	(0.18-1.41)	0.96	(0.61-1.52)	0.70	(0.23-2.19)	0.55	(0.12-2.56)	1.07	(0.26-4.31)	0.64	(0.25-1.65)	0.9
Disabled	3.13	(1.59-6.14)	1.47	(0.57-3.78)	8.62	(4.03-18.40)	2.52	(1.66-3.81)	1.49	(0.77-2.85)	7.92	(1.83-34.23)	1.41	(0.40-4.99)	3.67	(1.47-9.17)	0.10
Other	0.49	(0.16-1.53)	7.22	(2.90-17.96)	0.88	(0.51-1.51)	0.94	(0.43-2.04)	0.94	(0.18-4.96)	0.21	(0.04-1.16)	9.26	(3.40-25.27)	8.05	(2.03-31.91)	ntp
Education																	
≤12 years	1.00	-	1.00	-	1.00	-	1.00	-	1.00	-	1.00	-	1.00	-	1.00	-	
>12 years	0.86	(0.66-1.12)	1.07	(0.70-1.64)	0.99	(0.66-1.48)	0.87	(0.66-1.14)	0.92	(0.67-1.27)	0.96	(0.66-1.39)	1.02	(0.66-1.57)	0.86	(0.62-1.20)	0.3¶
Marital status																	ntp¶
Never married	0.96	(0.66-1.40)	0.90	(0.61-1.32)	0.67	(0.37-1.22)	1.05	(0.80-1.37)	1.16	(0.84-1.60)	2.11	(1.04-4.28)	1.52	(0.69-3.37)	1.08	(0.68-1.72)	0.3
Married/ cohabitated	1.00	-	1.00	-	1.00	-	1.00	-	1.00	-	1.00	-	1.00	-	1.00	-	
Separated/Divorced	1.47	(1.02-2.12)	1.47	(0.91-2.37)	2.12	(1.20-3.76)	2.53	(1.69-3.79)	1.82	(1.07-3.11)	2.67	(1.07-6.67)	1.54	(0.61-3.84)	1.07	(0.54-2.14)	0.3
Widowed	1.30	(0.93-1.83)	1.30	(0.93-1.83)	2.15	(1.49-3.11)	1.32	(0.96-1.82)	1.25	(0.59-2.64)	1.25	(0.59-2.64)	2.02	(1.04-3.90)	1.06	(0.47-2.42)	ntp
Presence of children in household																	0.5¶

	OR	(95% CI)	OR	(95% CI)	OR	(95% CI)	OR	(95% CI)	OR	(95% CI)	OR	(95% CI)	OR	(95% CI)	OR	(95% CI)	P¶
No children	1.00	-	1.00	-	1.00	-	1.00	-	1.00	-	1.00	-	1.00	-	1.00	-	
0-5 years of age	1.16	(0.87-1.54)	1.44	(0.95-2.19)	0.70	(0.48-1.01)	0.99	(0.73-1.34)	1.27	(0.81-2.00)	0.60	(0.26-1.35)	1.09	(0.57-2.11)	1.78	(1.02-3.10)	0.17
6-12 years of age	1.46	(1.02-2.09)	1.88	(1.23-2.88)	0.63	(0.39-1.02)	1.06	(0.81-1.40)	1.36	(0.97-1.90)	0.84	(0.36-1.96)	2.08	(0.84-5.13)	1.58	(0.94-2.67)	0.6
13-17 years of age	1.52	(1.03-2.24)	1.01	(0.66-1.55)	1.30	(0.91-1.86)	1.60	(1.10-2.31)	1.58	(1.02-2.44)	2.08	(0.86-5.04)	1.62	(0.78-3.35)	1.04	(0.51-2.15)	0.7

Data presented are from the Part 2 samples of the ESeMED survey and separate surveys from Northern Ireland, Bulgaria, Romania, and Portugal. All ORs are adjusted by age, income level, employment status, education, marital status, and presence of children.

* Gender×region×risk-factor interaction was tested using an ANOVA-style, F-statistic test of interaction. ¶ Overall joint test of risk-factor levels – tests within each contrast defined by level of risk-factor below.