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Material, psychosocial and sociodemographic determinants are associated with positive mental health in Europe: a cross-sectional study

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ABSTRACT

Objectives: To investigate the association between psychosocial, sociodemographic and material determinants of positive mental health in Europe.

Design: Cross-sectional analysis of survey data.

Setting: 34 European countries.

Participants: Representative Europe-wide sample consisting of 21 066 men and 22 569 women aged 18 years and over, from 34 European countries participating in the third wave of the European Quality of Life Survey (2011–2012).

Outcome: Positive mental health as measured by the WHO-5—Mental Well-being Index, while the lowest 25% centile indicated poor positive mental health.

Results: The prevalence of poor positive mental health was 30% in women and 24% in men. Material, as well as psychosocial, and sociodemographic factors were independently associated with poor positive mental health in a Europe-wide sample from 34 European countries. When studying all factors together, the highest OR for poor positive mental health was reported for social exclusion (men: OR=1.73, 95% CI 1.59 to 1.90; women: OR=1.69, 95% CI 1.57 to 1.81) among the psychosocial factors. Among the material factors, material deprivation had the highest impact (men: OR=1.96, 95% CI 1.78 to 2.15; women: OR=1.93, 95% CI 1.79 to 2.08).

Conclusions: This study gives the first overview on determinants of positive mental health at a European level and could be used as the basis for preventive policies in the field of positive mental health in Europe.

Strengths and limitations of this study

- Large dataset with comparable data across Europe.
- Overview of a broad range of material, psychosocial and sociodemographic determinants of positive mental health among people in Europe.
- Stratified analysis to take potential gender differences into account.
- No causal interpretation is possible because of cross-sectional nature of study.
- Response rate of the EQLS was lower than aspired and varied from more than 60% in Bulgaria, Cyprus, Malta, Poland and Slovakia to below 30% in Luxembourg and the UK.

(PMH) or mental well-being.[2 3] Recent studies that have explicitly considered levels of PMH in populations have illustrated that good mental health is more than just the absence of disease,[2 4 5] and that people can experience PMH even if diagnosed with a mental illness.[3] This is because mental well-being or PMH and mental illness are caused by different factors.[6] It has also been shown that low PMH is a risk factor for depression[7 8] and absence of PMH has been associated with an increased risk of mortality.[2 9]

The study of PMH is relatively young and there is still discussion on a common definition of PMH or mental well-being.[10] There are two (complementary) traditions in conceptualising well-being: the hedonic approach emphasises feeling good (happiness, pleasant affect, life satisfaction) whereas the eudaimonic approach focuses on optimal social and psychological functioning.[5] A valid measure of PMH should include items that assess the hedonic and eudaimonic domain.[3 5 11 12] Whereas various studies examined determinants of mental ill health, profound knowledge of determinants of PMH is lacking. PMH can be influenced by

BACKGROUND

According to the definition of the WHO mental health is a 'state of well-being in which the individual realises his skills, copes with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his community'.[1] Studies provide empirical support that mental health consists of two independent dimensions: mental ill-health and positive mental health

sociodemographic, psychosocial or material factors.[13–16] However, until now studies that have focused on PMH have investigated only few determinants and looked at one country or at a very limited number of countries. Whereas prevalences of PMH in European countries have been reported before,[17] no study so far has analysed a broad set of determinants of PMH considering a high number of European countries. The objective of our study was therefore to examine the association between sociodemographic, psychosocial and material factors and PMH at a European level taking gender differences into account.

METHODS
Sample
This study is based on the European Quality of Life Survey (EQLS), which is run every 4 years by the European Foundation for the improvement of living and working conditions. The third wave of the EQLS, which was carried out in 2011–2012, included people aged 18 years and older from 34 countries (EU-27, Croatia, Iceland, Montenegro, former Yugoslav Republic of Macedonia, Serbia, Turkey, Kosovo). In all countries, data were collected via face-to-face interviews at respondents' home, who were selected by multistage random sampling. The overall response rate was 41%. A more detailed description of the EQLS 2012 can be found elsewhere.[18]

Positive mental health
Positive mental health was measured with the WHO-5—Mental Well-being Index (WHO-5).[19] It is calculated from responses to five items: (1) I have felt cheerful and in good spirits; (2) I have felt calm and relaxed; (3) I have felt active and vigorous; (4) I woke up feeling fresh and rested and (5) my daily life has been filled with things that interest me. The degree to which the aforesaid positive feelings were present in the past 2 weeks is scored on a six-point Likert scale ranging from 0 'at no time' to 5 'all of the time'. The scores to these five questions can total to a maximum of 25, which is then multiplied by 4 to get to a maximum of 100, where 0 corresponds with worst thinkable well-being and 100 equals best thinkable well-being. The WHO-5 is considered a valid instrument to evaluate PMH in population-based studies[20] and assesses PMH with items covering the eudaimonic perspective on well-being as well as items covering the hedonic dimensions of well-being.[17] An average score of the index was calculated for the study population and those with values below the 25% centile were considered to have poor PMH.

Potential determinants of PMH
Three groups of determinants of PMH were studied: sociodemographic, psychosocial and material factors. This classification of determinants was inspired by studies that have used this classification in the field of self-rated health.[21–23]

Sociodemographic factors were age, educational level (categorised into three groups according to the International Standard Classification of Education), urbanisation level (living in rural/urban area) and citizenship (European/non-European). All these variables were categorical variables. Since potential risk factors might have different meaning for men and women, gender was not considered as a potential risk factor but as a structural variable and thus potential effect modifier. Therefore, all analyses were stratified by gender.[24]

Psychosocial factors were marital status, presence of children, social support (help from family/friends/neighbour/service provider in case of need for help around the house, advice, looking for a job, feeling depressed, financial problems; 5 items), social network (frequency of contact with family/friends/neighbours; 8 items), political participation (attended a meeting of a trade union/political party/political action group, attended protest or demonstration, signed a petition, contacted a politician/public official; 4 items), trust (in parliament/legal system/press/police/government/local authorities; 6 items), religion (frequency of attending religious services), social exclusion (feelings of lack of recognition/confusion in life/exclusion/inferiority; 4 items). Marital status, presence of children and religion were categorical variables. For social network, social support, political participation, trust and social exclusion, average scores were calculated and the median was used as cut-off point for the creation of dichotomised variables.

Material factors were household tenure, housing problems (shortage of space, rot in windows/doors/floors, damp/leaks in walls/roof, lack of bath or shower/indoor flushing toilet, place to sit outside; 6 items), neighbourhood problems (noise/air pollution/quality of drinking water/crime/violence/vandalism/litter/traffic; 6 items), material deprivation (not able to afford the following amenities/activities: heating/vacation/furniture/meal with meat, chicken, fish every second day/new clothes/having friends and family for drinks or meals at least once a month; 6 items), financial problems (problems paying bills for rent/informal and consumer loans/electricity; 4 items), quality of public services (health services/education system/public transport/long-term care/child care services/state pension system/social housing; 6 items).

Household tenure was a categorical variable. Housing problems, neighbourhood problems, financial problems, material deprivation and quality of public services were dichotomised at the median of the average score of the items.

STATISTICAL METHODS
First, the distribution of sociodemographic, psychosocial and material factors was described separately for men

Table 1 Percentages of men and women with poor positive mental health (PMH) by sociodemographic, psychosocial and material factors*

	Men			Women		
	N	Per cent	Poor PMH (%)	N	Per cent	Poor PMH (%)
PMH						
Good	15 997	76		15 751	70	
Poor	5069	24		6818	30	
Sociodemographic factors						
Age (years)						
18–24	2707	13	16	2539	11	22
25–34	3919	19	21	3742	17	24
35–49	5847	28	25	5925	26	29
50–64	4932	23	27	5227	23	32
65+	3662	17	28	5136	23	38
Education						
Primary or less	1971	9	36	3090	14	44
Secondary	13 945	67	24	13 983	62	30
Tertiary	5004	24	19	5366	24	22
Working						
Yes	11 494	55	20	8955	40	24
No	9573	45	29	13 614	60	34
Urbanisation level						
Countryside or village	9774	47	25	10 325	46	31
Town or city	11 247	54	24	12 187	54	30
Citizenship						
European	20 509	98	24	22 094	98	30
Non-European	471	2	25	409	2	30
Psychosocial factors						
Marital status						
Living with partner	11 990	57	24	11 678	52	28
Living alone	8926	43	24	10 749	48	32
Children						
Present	13 065	62	26	16 272	72	33
Absent	8001	38	22	6297	28	24
Religion						
Practicing often	4831	23	25	6854	31	31
Rarely	6875	33	23	7637	34	29
Never	9255	44	24	7976	36	31
Social network						
High	4097	19	24	4563	20	31
Low	16 969	81	24	18 007	80	30
Social support						
High	10 070	48	21	10 467	46	26
Low	10 996	52	27	12 102	54	34
Political participation						
Yes	5410	26	21	4818	22	25
No	15 268	74	25	17 380	78	32
Level of trust						
High	10 359	49	18	10 947	49	24
Low	10 708	51	30	11 623	52	36
Social exclusion						
Low	7800	37	16	8200	36	21
High	13 266	63	29	14 369	64	35
Material factors						
Neighbourhood problems						
Low	8024	38	21	8547	38	27
High	13 043	62	26	14 022	62	32
Housing problems						
Absent	13 381	64	20	13 893	62	25

Table 1 Continued

	Men			Women		
	N	Per cent	Poor PMH (%)	N	Per cent	Poor PMH (%)
Present	7499	36	31	8455	38	39
Household tenure						
Tenant	14 606	75	23	15 997	76	30
Owner	4832	25	25	5059	24	30
Material deprivation						
Absent	9843	51	14	8991	43	18
Present	9592	49	33	11 829	57	38
Financial problems						
No	16 207	77	21	17 379	77	27
Yes	4859	23	35	5191	23	41
Quality of public services						
Good	5699	27	17	6241	28	21
Poor	15 367	73	27	16 329	72	34

*Product of the design weight and the post-stratification weight was applied.

and women, and the percentage of poor PMH was reported for each category.

We performed random intercept multilevel logistic regression analyses to examine the association between the potential determinants and PMH.

Multilevel models are particularly appropriate for research designs where data for participants are organised on more than one level to take into account the between-variability and within-variability of these hierarchically organised data (individuals, region, country).[25] The model contains a so-called fixed part and a random component. Individual determinants were introduced as fixed effects, and country and region were used as random intercepts in the multilevel analysis taking into account three levels of data: individuals (level 1) nested in 330 regions (level 2), which are nested in 34 countries (level 3). Three separate models for women and men were computed to study the association between the groups of determinants (sociodemographic, psychosocial and material factors) and PMH independently (models 1–3). After that, all variables that were significant at $\alpha=0.05$ for at least one gender were included in the final model (model 4). Median ORs (MOR) were computed to quantify the country-level variation. MOR is defined as the median value of the OR between the country at highest risk and the country at lowest risk when randomly picking out two countries.[26] The MOR equals 1 if there is no variation between countries and gets larger if the between-country variation increases.[27] The measure is directly comparable with fixed-effects ORs.[27]

Although inter-relations between factors were found, no collinearity was detected as the variance inflation factor was never greater than 1.9. Variance inflation factors greater than 2.5 may be problematic.[28]

Since determinants of PMH have only rarely been studied, no literature on potential interactions was available. However, gender differences have been suggested in this context[14 29] and men and women have different life circumstances. Therefore, we studied men and women separately.

All statistical analyses were conducted using SAS statistical software V.9.3. The product of the design weight and post-stratification weight was used as the weighting factor as recommended in the EQLS guidelines. In sensitivity analyses multilevel logistic regressions were conducted without weights and with weights. The parameter estimates were substantially similar. Therefore the unweighted ORs are presented, as advised by Winship and Radbill,[30] because they are more efficient and the SE is correct.

RESULTS

Overall, 21 066 men and 22 569 women participated in the study and were considered for the present analysis. Table 1 shows the distribution of sociodemographic, psychosocial and material factors and the percentage of people with poor PMH in each category for men and women separately. Overall, the proportion of poor PMH was higher in women than in men (30% vs 24%). Furthermore, women in the study sample were slightly older, more often had low education, did not work, had children, practiced religion, did not engage in political participation and were affected by material deprivation.

Models 1–3

Table 2 presents the results for the multilevel logistic regression analyses, with each set of factors being studied separately for men and women. In model 1, which included sociodemographic factors, lower educational level, older age and not working were significantly associated with poor PMH among both genders. Additionally being citizen of a non-European country was associated with poor PMH in women. In model 2, including sociodemographic and psychosocial factors, living without a partner, practicing religion rarely or never, low social support, low levels of trust and high

Table 2 Association between sociodemographic, psychosocial and material factors and poor positive mental health for men and women, results from multilevel logistic regression analyses, showing OR and 95% CI

	Men				Women			
	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
Sociodemographic factors								
Age (years)								
18–24	1.00				1.00			1.00
25–34	1.78 (1.51 to 2.08)			1.65 (1.37 to 1.98)	1.37 (1.20 to 1.56)			1.27 (1.09 to 1.50)
35–49	2.33 (2.00 to 2.70)			2.26 (1.88 to 2.71)	1.87 (1.65 to 2.11)			1.69 (1.45 to 1.96)
50–64	2.17 (1.88 to 2.50)			2.44 (2.03 to 2.93)	1.87 (1.65 to 2.11)			1.85 (1.59 to 2.15)
65+	1.77 (1.52 to 2.06)			2.47 (2.03 to 3.01)	1.97 (1.74 to 2.24)			2.11 (1.81 to 2.46)
Education								
Primary or less	1.00				1.00			1.00
Secondary	0.66 (0.58 to 0.74)			0.73 (0.64 to 0.83)	0.68 (0.62 to 0.74)			0.76 (0.69 to 0.84)
Tertiary	0.50 (0.43 to 0.57)			0.71 (0.61 to 0.83)	0.47 (0.42 to 0.53)			0.65 (0.58 to 0.73)
Working								
Yes	1.00				1.00			1.00
No	1.66 (1.52 to 1.81)			1.27 (1.15 to 1.40)	1.27 (1.18 to 1.37)			1.13 (1.05 to 1.23)
Urbanisation level								
Countryside or village	1.00				1.00			
Town or city	1.01 (0.93 to 1.09)				1.01 (0.95 to 1.07)			
Citizenship								
European	1.00				1.00			1.00
Non-European	1.22 (0.94 to 1.56)			1.01 (0.77 to 1.33)	1.31 (1.05 to 1.63)			1.02 (0.81 to 1.30)
Psychosocial factors								
Marital status								
Living with partner		1.00		1.00		1.00		1.00
Living alone		1.20 (1.09 to 1.31)		1.18 (1.07 to 1.30)		1.31 (1.23 to 1.40)		1.17 (1.09 to 1.25)
Children								
Present		1.00		1.00		1.00		1.00
Absent		0.96 (0.86 to 1.08)		1.00 (0.89 to 1.12)		0.83 (0.76 to 0.91)		0.90 (0.82 to 0.98)
Religion								
Practicing often		1.00		1.00		1.00		1.00
Rarely		1.11 (1.00 to 1.23)		1.27 (1.14 to 1.42)		1.09 (1.01 to 1.17)		1.24 (1.14 to 1.35)
Never		1.27 (1.15 to 1.41)		1.13 (1.01 to 1.26)		1.27 (1.18 to 1.38)		1.08 (1.00 to 1.17)
Social network								
High		1.00				1.00		
Low		1.03 (0.93 to 1.13)				1.04 (0.96 to 1.12)		
Social support								
High		1.00		1.00		1.00		1.00
Low		1.30 (1.20 to 1.41)		1.20 (1.10 to 1.31)		1.44 (1.35 to 1.54)		1.29 (1.20 to 1.38)
Political participation								
Yes		1.00				1.00		
No		0.99 (0.91 to 1.08)				1.03 (0.95 to 1.11)		
Level of trust								
High		1.00		1.00		1.00		1.00
Low		1.66 (1.53 to 1.79)		1.43 (1.31 to 1.55)		1.51 (1.42 to 1.61)		1.32 (1.23 to 1.41)
Social exclusion								
Low		1.00		1.00		1.00		1.00
High		1.82 (1.68 to 1.98)		1.73 (1.59 to 1.90)		1.80 (1.68 to 1.92)		1.69 (1.57 to 1.81)
Material factors								
Neighborhood problems								
Low			1.00	1.00			1.00	1.00
High			1.16 (1.07 to 1.27)	1.13 (1.04 to 1.23)			1.12 (1.04 to 1.20)	1.07 (1.00 to 1.15)
Housing problems								
Absent			1.00	1.00			1.00	1.00
Present			1.46 (1.34 to 1.60)	1.40 (1.30 to 1.52)			1.58 (1.48 to 1.69)	1.52 (1.43 to 1.63)

Table 2 Continued

	Men				Women			
	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
Household tenure								
Tenant			1.00	1.00			1.00	1.00
Owner			1.00 (0.89 to 1.11)				1.00 (0.91 to 1.08)	
Material deprivation								
Absent			1.00	1.00			1.00	1.00
Present			2.19 (2.00 to 2.41)	1.96 (1.78 to 2.15)			2.17 (2.01 to 2.35)	1.93 (1.79 to 2.08)
Financial problems								
No			1.00	1.00			1.00	1.00
Yes			1.57 (1.42 to 1.73)	1.50 (1.34 to 1.63)			1.39 (1.29 to 1.51)	1.33 (1.23 to 1.43)
Quality of public services								
Good			1.00	1.00			1.00	1.00
Poor			1.54 (1.40 to 1.70)	1.39 (1.27 to 1.53)			1.64 (1.51 to 1.77)	1.51 (1.40 to 1.63)
Random effects								
Country level								
Between country variance (SE)	0.1767 (0.05066)	0.1265 (0.03799)	0.08360 (0.02876)	0.07835 (0.02697)	0.1711 (0.04749)	0.1258 (0.03594)	0.08378 (0.02609)	0.07317 (0.02314)
MOR	1.50	1.40	1.32	1.31	1.48	1.40	1.32	1.30
Region level								
Between region variance (SE)	0.07319 (0.01670)	0.06726 (0.01644)	0.08601 (0.02034)	0.08965 (0.02038)	0.07009 (0.01378)	0.05600 (0.01303)	0.05915 (0.01401)	0.05245 (0.01312)

Models 2 and 3 have been adjusted for sociodemographic factors of model 1.
MOR, median OR.

levels of social exclusion were significantly associated with poor PMH among both genders, independent of sociodemographic factors. Having no children was additionally associated with poor PMH in women. The strongest effect in model 2 was seen for high social exclusion with an OR of 1.82 (95% CI 1.68 to 1.98) for men and 1.80 (95% CI 1.68 to 1.92) for women. In model 3, including sociodemographic factors and material factors, all material factors, except household tenure, were associated with poor PMH among both genders, controlling for sociodemographic characteristics. The highest OR was seen for material deprivation in both genders: the OR for men was 2.13 (95% CI 2.00 to 2.41) and for women was 2.17 (95% CI 2.01 to 2.35). Urbanisation level and social network were not associated with poor PMH in both genders in the respective models, and were therefore not included in model 4.

Model 4

In model 4 the strongest associations with poor PMH among both genders were observed for higher age, social exclusion (men: OR=1.73, 95% CI 1.59 to 1.90; women: OR=1.69, 95% CI 1.57 to 1.81) and material deprivation (men: OR=1.96, 95% CI 1.27 to 1.53; women: OR=1.93, 95% CI 1.79 to 2.08). Moreover, living without a partner, lower education status, not working, practicing religion rarely or never, low social support, social exclusion and all material factors were significantly associated with poor PMH among both genders. Not having children was independently associated with poor PMH in women only. Being citizen of a non-European country was no longer significant when taking into account all other factors in model 4.

Country-level variation

MOR differed only slightly between men and women, but decreased from model 1 to model 4, where more individual-level information was included. The MOR in model 1, where sociodemographic factors are included, was 1.50 for men and 1.45 for women. However, when studying all factors together in model 4 the MOR was lower, namely 1.31 for men and 1.30 for women. Thus, country-specific variation was larger with regard to effects of sociodemographic factors on mental health, but smaller considering psychosocial (MOR=1.40 for both genders) or material factors (MOR=1.32 for both genders).

DISCUSSION

This is one of the first studies to examine PMH in a large Europe-wide sample and to the best of our knowledge the first to report on a wide range of determinants. We grouped the determinants that have individually been reported in the literature with regard to mental health. Our study found a broad range of risk factors for poor PMH and our results are mainly in line with previous research that showed similar associations in single

countries or single correlates, not controlling for other factors. However, most studies so far have looked at mental illness and not at PMH. Other studies covering positive aspects of mental health used single questions about happiness or life satisfaction. This approach is not the same as the concept of PMH, since it only covers the hedonistic perspective of well-being, in the sense of feeling happy.[31]

A large number of associations between sociodemographic, psychosocial and material risk factors and PMH in citizens from 34 European countries were found in this study. Higher age, lower educational status and not working were associated with poor PMH among both genders. Of the psychosocial factors, practicing religion rarely or never, low social support, low levels of trust and high social exclusion were associated with poor PMH among both genders. Living alone was associated with PMH in both genders. Not having children had a protective effect against poor PMH for women but not for men. All material determinants were associated with poor PMH among men and women.

Our results are in line with previous studies reporting that low educational level,[14 32–34] and not working,[14 33] are associated with poor mental well-being. The results on age and indicators of mental well-being are controversial, some studies reporting that older age groups are at a higher risk for poor mental well-being,[14 16 32 35] which would be in accordance with our results, others finding the opposite.[36–38] Associations between living area and mental well-being have been reported; however, the direction of this relationship is not clear: living in a rural area[14] and living in a large city[16] have been associated with poor PMH. When classifying living area into two categories—urban or rural—we did not find a significant association between living area and PMH. Living alone,[16 33 35] low social support,[13 14 16 34 39] loneliness[14] and exclusion[40] have been associated with poor positive mental or emotional health and a study in Russia found associations between high levels of trust and high emotional health.[40] We found that not or rarely attending religious services was associated with poor PMH. A previous study reported that frequency of prayer is associated with mental well-being.[38] There are some studies investigating the associations of material factors and mental illness. Poor economic condition[16] and neighbourhood problems[15 39] have been associated with poor mental well-being or PMH before. However, research on the effect of other material factors on PMH is lacking.

In the intermediate models 1–3, age, social exclusion and material deprivation showed the strongest association with poor PMH among men and women. These three factors also appeared to have the strongest association with poor PMH in our final model (model 4), examining the effect of all determinants together. Particularly, all material factors were significantly associated with poor PMH in the separate as well as in the complete model, taking further sociodemographic and psychosocial factors into account. This group of determinants has not been studied extensively yet in the context of PMH but rather with regard to self-rated health[21 22] or mental illness.[41] The fact that these factors stayed significant throughout all models is in agreement with the belief that material factors may have a direct (through biological pathways) or indirect effect (through eg, behavioural factors) on health outcomes.[22] We might not have found a significant association of household tenure and PMH because there are cultural differences between countries in the approaches of buying a house or living on rent. Hence household tenure might not be an indicator for material prosperity in all countries.

One of the limitations of this study is its cross-sectional nature. When interpreting the relationship between the determinants, it needs to be kept in mind that no causal interpretation is possible. The response rate of 41% in the third round of the EQLS was lower than aspired and differed across countries.[18] It has been argued that non-participants may be more likely to belong to low social groups and to have poorer health outcomes.[42] This would be a selection bias and the prevalence of poor PMH as well as the association between some determinants, especially material determinants, might be underestimated. This study did not take into account (mediating) behavioural factors (eg, physical activity), which may play a role in the association with PMH. Physical activity has a positive effect on PMH[43] and it could be hypothesised that living in areas with high neighbourhood problems might hinder leisure-time physical activity, hence physical activity could be a mediating factor in the association between material factors and PMH. For future studies it would be highly desirable to also include behavioural factors. Although the WHO-5 is a validated and relatively short measure of PMH in population surveys, there are more comprehensive measures to assess this complex construct, which should be used in future studies. Moreover, in this study the cut-off point for poor PMH has been set at the 25% centile to look at people who have low levels of PMH. Using medians or quartiles as cut-off points when no official cut-off points are available is common practice. However, a standardised cut-off point for the WHO-5 would be desirable. The study of PMH is relatively young and there is still discussion on a common definition of PMH and different measurements exist. It will take some years to achieve agreement on the appropriate measurement and definition of PMH.[10] In this context it would be highly desirable to also test if instruments are gender sensitive. This study, on the other hand, has many strengths. The large dataset with comparable data across Europe, allowed us to study each gender separately and comparability of data between 34 European countries enabled us to give an overall view of determinants of PMH among people in Europe. It used the WHO-5 as a validated measure for PMH and has analysed a broad picture of potential risk factors.

CONCLUSION

This study showed independent associations between various sociodemographic, psychosocial and material determinants and PMH. Our study provides the first overview of the distribution of determinants and their association with PMH in Europe. Therefore, it can be used as the basis for confirmatory and more specific analysis of determinants of poor PMH as well as for the development of preventive programmes or policies in this context.

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