High prevalence of somatic symptoms in a semi-rural Chilean population and its association with depression and anxiety

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Abstract

Purpose: To study the prevalence of mental disorders with an emphasis on somatic symptoms and their association with social support in a Chilean semi-rural area. Methods: We studied a sample of 796 adults born between 1974 and 1978 in Limache, Chile. The Patient Health Questionnaire-9, the Generalized Anxiety Disorder-7, the Patient Health Questionnaire-15, the Alcohol Use Disorder Identification Test and the Medical Outcomes Study Social Support Scale test were used to assess depression, anxiety, somatic symptoms, alcohol misuse and social support respectively. Results: The prevalence of psychosomatic symptoms was 63.8% in women (most of them in the severe range) and 34.1% in men. The rates of depression, anxiety and alcohol misuse were 17.7%, 21.7%, and 9.7% respectively. Psychosomatic symptoms were strongly associated with depression (OR=14.2, 95%CI:7.5-26.9) and anxiety (OR=7.34, 95%CI:4.6-11.6). Psychosomatic symptoms were associated with functional impairment (OR=5.91, 95% CI 2.7-12.7) and the association was mainly due to symptoms of depression and anxiety. Mental disorders were inversely associated with social support. Conclusions: Psychosomatic symptoms were the norm, especially in women. Social support is marginally lower in those with a mental disorder, but still perceived as high. Physical complains in these communities are frequently the expression of depression and anxiety.

Key words

Somatic symptoms; depression; anxiety; hazardous alcohol use; population study; social support.

Introduction

In spite of the high prevalence of mental disorders in low- and middle- income countries, resources for managing these disorders are lower than for most other medical specialities (Jacob et al., 2007; Prince et al., 2007). The Chilean prevalence rates are comparable or higher than those from other Latin-American countries (Menéndez et al., 2005; Vicente et al., 2004), the annual prevalence for a major depressive episode has been reported to be 5.7% and the lifetime prevalence 9.2% (Vicente, Kohn, Rioseco, Saldivia, Levav, et al., 2006). Unexpectedly the prevalence of somatoform disorder was low (between 2.4 and 4.4%) in some Chilean population studies (Vicente et al., 2004; Vicente, Kohn, Rioseco, Saldivia, Levav, et al., 2006; Vicente, Kohn, Rioseco, Saldivia, Navarrette, et al., 2006) in contrast to the high prevalence of unexplained symptoms in primary care settings in developed (Kurt Kroenke, Spitzer, & Williams, 2002) and less developed countries (Fullerton, Florenzano, & Acuña, 2000).

In Chile we have only limited knowledge on mental disorders in rural areas. It is important to document the prevalence and severity of mental disorders in rural areas because expertise in mental disorders in Chile is concentrated in urban centres and less than 25% of the centres with psychiatric facilities are accessible to the rural population (Chilean Ministry of Health, 2014), a situation similar to other countries in the region (Kohn et al., 2005). In addition there is scarce information in relation to the prevalence of somatic symptoms and whether somatic symptoms might be the form of expressing depression and anxiety in these communities.

We were interested to explore the level of support that subjects with mental disorders were receiving from families and friends. There are few studies that have assessed the association between social support and mental disorders and even fewer in semi-rural areas (Garmendia, Alvarado, Montenegro, & Pino, 2008; Kim et al., 2014; C D Sherbourne, Hays, & Wells, 1995; Shin et al., 2008). They have suggested that social support could play an important role in the management of depressive disorders (C D Sherbourne et al., 1995; Shin et al., 2008) and family and friends' social support have been associated with a better response to antidepressant treatments (Rundell, 2012). The aims of this study were: 1) To assess the prevalence of mental disorders including alcohol misuse with an emphasis in somatisation in a young semi-rural Chilean population, 2) to determine the association between somatisation and depression and anxiety 3) to examine the effect of somatisation in functional impairment and 4) to explore the association between social support and depression, anxiety, somatisation and alcohol misuse.

Methods

Study design and sample

This study is based on information from a birth cohort of individuals born between 1974 and 1978 in the only Hospital in Limache in the Region of Valparaíso, Chile (Amigo, Bustos, Zumelzú, & Rona, 2014). A random sample of 1232 individuals was selected for this cohort study between 2000 and 2002 from a framework of 3076 newborns in the hospital register. The current study is based on data from 796 (64.6%) individuals from the original sample obtained in a follow up assessment carried out between 2010 and 2012 when participants were between 32 and 38 years old.

Measurements

The outcome measures of the study were depression, anxiety, somatic symptoms and alcohol misuse. Depression was measured using the Patient Health Questionnaire-9 (PHQ-9), a score of 10 to 14 was considered moderate depression, a score of 15 to 19 moderately severe depression and a score of 20 to 27 severe depression (K. Kroenke, Spitzer, & Williams, 2001). The Generalized Anxiety Disorder-7 (GAD-7) was used to evaluate anxiety, a score of 10 to 14 indicating moderate anxiety and a score of 15 to 21 severe anxiety (Spitzer, Kroenke, Williams, & Löwe, 2006). The Patient Health Questionnaire-15 (PHQ-15) was used to evaluate somatic symptoms, symptoms were moderate with a score of 10 to 14 and severe with a score of 15 to 30 (Kurt Kroenke et al., 2002). Alcohol misuse was measured by the Alcohol Use Disorders Identification Test (AUDIT) (Babor, Higgins-Biddle, Saunders, & Monteiro, 2001). Scores between 8 and 15 were considered as hazardous consumption (8-15 points) and scores of 16 or more as harmful consumption. The AUDIT test is equally appropriate for women and men, so the same threshold score can be used for both (Anderson, Gual, & Colon, 2008; Babor et al., 2001). Although all test used have been validated and demonstrated to have excellent psychometric properties (Babor et al., 2001; K. Kroenke et al., 2001; Spitzer et al., 2006), the measures cannot be considered diagnostic, but denote possible mental disorder.

Social support was measured by the Medical Outcomes Study (MOS) Social Support Scale (Cathy Donald Sherbourne & Stewart, 1991), a tool of 19 items which uses a 5-point Likert-type scale for each item. It includes four dimensions of social support: i) emotional/informational support (range of 0 to 40 points), the former being "the expression of positive affect, empathetic understanding and the encouragement of expressions of feelings" whereas the latter is "the offering of advice, information, guidance or feedback"; ii) tangible support (range of 0-20 points), is "the provision of material aid or behavioural assistance"; iii) positive social interaction (range of 0-20 points),

defined as "the availability of other persons to do fun things with one"; and iv) affectionate support (range of 0 to 15

points), understood as "involving expressions of love and affections" (Cathy Donald Sherbourne & Stewart, 1991).

The sum of all subscales gives a total social support score ranging from 0 to 95. The ranges of scores for each

subscale and total score range were transformed into a 0 to 100 range for comparability purposes. The Spanish

version has been validated in chronic disease patients (Costa Requena, Salamero, & Gil, 2007; Revilla, Luna del

Castillo, Bailón, & Medina, 2005).

We used one question from SF-36 to assess functional impairment as separate item referred to if physical or

emotional problems interfere with normal social activities with family, friends, neighbours or groups (Ware, Snow,

Kosinski, & Gandek, 1993).

The socio-demographics factors measured were age, gender, marital status (married, partner, single,

divorced, separated or widow), residence area (urban or rural) based on data provided by the Limache and Olmue,

two adjacent County Councils, years of schooling (based on the highest educational level approved) and

socioeconomic level using the methodology of the World Association of Market Research, as recommended by

ADIMARK (the main market research and public opinion organisation in Chile), based on a matrix of educational

level and occupation of head of the household. This matrix provides five socioeconomic categories: ABC1 (high),

C2 (middle-high), C3 (middle), D (middle-low) and E (low). We created a binary variable to indicate whether the

head of the household was the participant, as this classification does not distinguish whether the head of the

household is the participant in the study.

Statistical Analysis

Logistic analyses were performed in which the dependent variables depression, anxiety, somatic symptoms,

and hazardous and harmful alcohol consumption were separately assessed. The main explanatory variables were

social support and socio-demographic factors. Total social support and each subscale were analysed separately. In

addition, logistic regressions were made in which the dependent variable was somatic symptoms and explanatory

variables were depression and anxiety in the total sample and by gender. To assess the effect of somatic symptoms

in functional impairment, logistic regression were performed modelling functional impairment according to somatic

symptoms without adjustment, adjusted for socio-demographic factors and adjusted for socio-demographic factors

and psychiatric comorbidity (depression and anxiety). No significant two ways interactions were found, but some of

the analyses were gender specific as there were large differences in the prevalence for each of the dependent variables between sexes. A weight was applied to account for the non-random nature of attrition based on the reciprocal of the probability of 35.4% losses that occurred between phase 1 (2001-2002) and phase 2 (2010-2012) (Weuve et al., 2012). Statistical analyses were performed using software STATA 11.0 (STATA Corp LP, College Station, TX).

Ethical issues

The Ethics Board of the Faculty of Medicine of the University of Chile approved the study. Individuals gave and signed positive consent to participate in the study after receiving information on the purposes, risks and benefits of the study.

Results

Nearly two-thirds of participants were women and the median ages were similar for men and women (median: 35.2, inter quartile range (IQR): 34.1-36.6 years old). Most participants reached at least secondary education and approximately 50% finished secondary education. Fifty per cent were married or were in a long-term relationship. Twenty seven per cent lived in a rural area and most belonged to either a middle-low (D) or middle (C3) socioeconomic level; nobody belonged to the high socioeconomic stratum. The social support scores were high, especially in relation to the positive social interaction dimension (median: 100, IQR: 80-100) and affectionate social support scores (median: 100, IQR: 100-100). The total social support median score was 92.6 points (IQR: 79-100) (Table 1).

The prevalence of depression was 17.7% (2.1% in the severe range), anxiety 21.7% (6.9% in the severe range) and somatic symptoms 53.1% (33% with severe symptoms). The prevalence rates were higher in women (p<0.001), 63.8% of women had moderate or severe somatic symptoms. The prevalence of hazardous or harmful alcohol consumption was 9.7%, more common in males than females (p<0.001). The presence of more than one condition (depression, anxiety or somatisation) was 29.5% in women and 13.6% in men (p<0.001) (Table 2).

Depression and anxiety were associated with female gender, being divorced, separated or widow, and having lower social support both in the total score and each subscale score. Somatic symptoms were associated with female gender, socioeconomic level reflected in the odds ratio of low socioeconomic level compared to middle-high status and the chi-squared trend (p= 0.03), and total social support for each of its subscales, except for affectionate

social support (Table 3). The results described were similar to the unadjusted analyses (not shown, but available from the authors). As expected, hazardous and harmful alcohol consumption was strongly associated with gender (OR: 0.08, CI: 95% 0.04-0.15 for females in comparison to males), but it was not associated with any other socio-demographic factors. Social support was associated with alcohol misuse only in the affectionate subscale (Table 3).

Having moderate or severe somatic symptoms was strongly associated with moderate or severe depression in both genders (male OR: 17.55, CI 95%: 35.71-53.97; female OR: 12.2, CI 95%: 5.48-27.12) and to a lower level with moderate or severe anxiety (male OR: 12.2, CI 95%: 5.48-27.12; female OR: 7.93, CI 95%: 4.27-14.76) (Table 4). Odds ratios in those with depression or anxiety were similar to the odds ratios of depression alone, as depression and anxiety were highly associated.

Somatic symptoms were highly associated with functional impairment when adjustment for socio-demographic factors, but became non-significant when also adjusted for psychiatric comorbidity in total sample and by gender (Table 5).

Discussion

The main findings of this study were the high prevalence of somatic symptoms particularly in women, the strong association of somatic symptoms with depression and anxiety and that somatic symptoms were strongly associated with functional impairment mainly explained by symptoms of depression and/or anxiety. Somatic symptoms were associated with a poorer socio-economic status in contrast with the other mental disorders, which were not in this community characterised by limited socio economic heterogeneity. Social support was consistently negatively associated with mental disorders, except for those who were above the threshold of alcohol misuse.

In this semi-rural population, prevalence rates of mental disorders are as high as in urban population in Chile though caution should be exercise as the instruments of assessment were different (Chilean Ministry of Health, 2010; Vicente et al., 2004; Vicente, Kohn, Rioseco, Saldivia, Levav, et al., 2006). The prevalence of somatic symptoms in this study was double the reported in patients seeking health care (25%) (Fullerton et al., 2000) and it was also higher than the rates reported in studies using the same instrument in the primary care population (30%) and in general population (9.3%) of developed countries (Kocalevent, Hinz, & Brähler, 2013; Kurt Kroenke et al., 2002). This high prevalence is in contrast to the low prevalence of somatoform disorders in Chile (Vicente et al., 2004; Vicente, Kohn, Rioseco, Saldivia, Levav, et al., 2006; Vicente, Kohn, Rioseco, Saldivia, Navarrette, et al.,

2006). This could probably be explained by the difficulties for fulfilling the criteria of somatoform disorder as defined in the DSM-IV in terms of the length of period of the symptoms, the range of symptoms and the lack of appropriate investigation in survey conditions. Only a small group of individuals with somatic symptoms are diagnosed with a somatisation disorder, whereas an important group remain as individuals with medically unexplained symptoms. The findings on our study might be a stronger local evidence of the clinical inadequacy of the actual classification of somatic symptoms and related disorders, as suggested in the literature (Cosci & Fava, 2016). The high prevalence of somatic symptoms in our study could be in part explained by socio-cultural factors such as living in a semi-rural area characterised by low socio-economic level, a finding also reported for other rural communities in Latin America (Tófoli, Andrade, & Fortes, 2011). Somatic symptoms may be the main way to express mental disorders in rural areas or in low socioeconomic strata in Latin America, a feature that may be less common in urban settings or in more developed countries (Simon, VonKorff, Piccinelli, Fullerton, & Ormel, 1999). The strong association of depression and anxiety with somatic symptoms in our study has been described in general population, especially in women (Lieb, Meinlschmidt, & Araya, 2007; Shidhaye, Mendenhall, Sumathipala, Sumathipala, & Patel, 2013). This study has also demonstrated that most of the association between somatisation and functional impairment was explained by symptoms of depression and anxiety.

We found a consistent association between social support and mental disorders despite the high level of support perceived even in those with a possible mental disorder. In the Medical Outcomes Study (MOS), Sherbourne and Stewart (Cathy Donald Sherbourne & Stewart, 1991) reported a mean score of 70 points in social support, almost 20 points lower than in our study, possibly due to the chronic disease status of the participants in that study more prone to having a pessimistic view of life (C. D. Sherbourne, Meredith, Rogers, & Ware, 1992). As social support is perceived as being high for most participants with a possible mental disorder, developing channels of communication between mental health staff and relatives/close friends might be relevant in the management of patients with mental disorders (Griffiths, Crisp, Barney, & Reid, 2011), especially considering that mental health care services in Chile are concentrated in cities (Chilean Ministry of Health, 2014). The Limache population has access to primary health care and it has been possible to refer patients to a community mental health centre only since 2012, just after the completion of our survey. This approach should be extended to those who predominantly report somatic symptoms. However, it must be considered that occasionally relatives and friends may be a hindrance

rather than help, and health care staff needs to evaluate whether participation of others in the management of patients could be unhelpful or even harmful (Griffiths et al., 2011).

The association between lower social support and depression in our study is in agreement with findings from other studies (Kim et al., 2014; C D Sherbourne et al., 1995; Shin et al., 2008). The mechanism to explain the association between social support and a mental disorder may have two possible components, patients with mental disorder may be more prone to social withdrawal (Cleary, Horsfall, & Escott, 2014) and it is also possible that relatives and friends become more reluctant to communicate with a person who is unable to enjoy pleasurable activities, becomes easily irritable and has a pessimist outlook of life. In this context, mental health staff needs to be aware that support from family members and close friends may not be forthcoming and they may need help in re-establishing or improving relationships to the benefit of patients.

We did not find differences related to rural status, education and socio-economic in relation to depression, anxiety and alcohol misuse. This may be due to the limited heterogeneity in education and socioeconomic status in our sample. Many of those living in a rural area work in the urban area of Limache and many who live in an urban area work in a rural setting. So the rural/urban and the socio-economic status contrast as explained above were limited. Even within this limited contrast we found a noticeable association between socio-economic status and somatic symptoms.

This study had high acceptability and the response rate was high among those who remained in the studied area. Most of those who were not traced had left the area with their families. The study was carried out in one semi-rural agricultural community relatively near to big cities and results might be more marked in remote semi-rural communities. Men were more difficult to locate and more reluctant to participate hence it is possible that those who participated were different to those who did not. However, we compared those who participated in our study and those who participated only in the first phase of the study in 2000- 2002 and the differences were minor (Amigo et al., 2014), and we also weighted the sample accounting for the non-random nature of attrition in the analysis. All measures used were validated and are frequently used in population studies, but we only claim that subjects may have a possible mental disorder, as a clinical evaluation was not performed. We did not study substance abuse, other than alcohol and smoking, as this is a cohort study and the use of identifiers would have limited the reliability of the information collected on cannabis and other recreational drug use. There may have been a small chance that some individuals had an organic condition and were wrongly classified as having somatisation. However, the PHQ-15 has

been found to be an appropriate tool in many studies (Kocalevent et al., 2013; Körber, Frieser, Steinbrecher, & Hiller, 2011; Kurt Kroenke, Spitzer, Williams, & Löwe, 2010; Zijlema et al., 2013), we demonstrated the strong association between somatic symptoms and depression/anxiety so it is unlikely that a few misclassified individuals would have changed the results. Finally, this study is cross-sectional design, so it is not possible to make temporal inferences based on the reported associations.

Conclusions

There is an unusually high prevalence of somatic symptoms in this semirural Chilean community. Somatic symptoms are strongly associated with depression and anxiety in both genders, and most of the association of somatic symptoms and functional impairment might be explained by depression and anxiety. Primary care health staff needs to be aware that many of their patients with somatic symptoms may also have symptoms of depression and/or anxiety.

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Table 1: Socio-demographic and social support factors according to mental illness outcomes.

	Total (N= 796)	Moderate or severe depression (N = 141)	Moderate or severe anxiety (N = 173)	Moderate or severe burden of somatic symptoms (N = 423)	Hazardous or harmful alcohol use (N = 76)
Age (years) median (IQR)	35.2 (34.1-36.6)	35.1 (34.1-36.5)	35.1 (33.9-36.5)	35.0 (33.9-36.6)	35.3 (34.2-36.4)
Marital status N (%)					
Married or partner	400 (50.3)	62 (44.0)	86 (49.7)	212 (50.1)	40 (52.6)
Single	283 (35.6)	46 (32.6)	46 (26.6)	134 (31.7)	25 (32.9)
Divorced, separated or widow	113 (14.2)	33 (23.4)	41 (23.7)	77 (18.2)	11 (14.5)
Years of school education median (IQR)	12 (9-12)	12 (9-12)	12 (9-12)	12 (9-12)	10 (8-12)
Residence area N (%)					
Rural	217 (27.3)	39 (27.7)	49 (28.3)	114 (26.9)	20 (26.3)
Urban	579 (72.7)	102 (72.3)	124 (71.7)	309 (73.1)	56 (73.7)
Socioeconomic level N (%)					
Low	67 (8.4)	17 (12.1)	17 (9.8)	41 (9.7)	13 (17.1)
Middle-low	330 (41.5)	69 (48.9)	85 (49.1)	184 (43.5)	38 (50.0)
Middle	276 (34.7)	39 (27.7)	50 (28.9)	138 (32.6)	17 (22.4)
Middle-high	123 (15.5)	16 (11.3)	21 (12.2)	60 (14.2)	8 (10.5)
Participant is main breadwinner N (%)	358 (45.1)	61 (43.6)	81 (46.8)	179 (42.4)	47 (61.8)
MOS social support score, median (IQR)					
Emotional/informational	95 (75-100)	85 (60-100)	87.5 (67.5-100)	90 (70-100)	90 (71.3-100)
Tangible	95 (75-100)	80 (60-100)	85 (60-100)	90 (65-100)	95 (80-100)
Positive social interaction	100 (80-100)	90 (70-100)	90 (70-100)	90 (75-100)	100 (80-100)
Affectionate	100 (100-100)	100 (86.6-100)	100 (93.3-100)	100 (100-100)	100 (86.7-100)
Total score	92.6 (79-100)	87.4 (68.4-95.8)	87.4 (69.5-96.8)	88.4 (74.7-97.9)	89.5 (75.8-99.5)
Functionality impairment N (%)	61 (7.7)	39 (27.7)	41 (23.7)	53 (12.5)	6 (7.9)

Numbers may not add up because of missing data.
MOS= Medical Outcomes Study Social Support Scale; IQR= Inter quartile range
All dimensions of MOS were rescaled to 100 (see methods)

Table 2: Prevalence of depression, anxiety, somatisation, hazardous and harmful alcohol misuse and clustering mental illness outcomes by gender.

	Total N= 796 N (%)	Female N= 509 N (%)	Male N= 287 N (%)
Depression			
Moderate (10-19 PHQ-9 score)	124 (15.6)	96 (18.9)	28 (9.8)
Severe (≥ 20 PHQ-9 score)	17 (2.1)	17 (3.3)	0 (0)
Anxiety			
Moderate (10-14 GAD-7 score)	118 (14.8)	93 (18.3)	25 (8.7)
Severe (≥ 15 GAD-7 score)	55 (6.9)	40 (7.9)	15 (5.2)
Burden of somatic symptoms			
Moderate (10-14 PHQ-15 score)	160 (20.1)	106 (20.8)	54 (18.8)
Severe (≥ 15 PHQ-15 score)	263 (33.0)	219 (43.0)	44 (15.3)
Alcohol misuse			
Hazardous alcohol use (8-15 AUDIT score)	63 (8.1)	12 (2.4)	51 (18.4)
Harmful alcohol use or dependence (≥16 AUDIT score)	13 (1.6)	1 (0.2)	12 (4.3)
Number of mental disorders **(Moderate or severe depression, anxiety or somatic symptoms)**			
1 condition	263 (33.0)	192 (37.7)	71 (24.7)
2 conditions	93 (11.7)	71 (14.0)	22 (7.7)
3 conditions	96 (12.1)	79 (15.5)	17 (5.9)

Table 3: Association between socio-demographic factors and social support with depression, anxiety, somatisation and alcohol misuse.

	Moderate or severe depression (n=141) OR (95% CI)	Moderate or severe anxiety (n=173) OR (95% CI)	Moderate or severe burden of somatic symptoms (n=423) OR (95% CI)	Hazardous or harmful alcohol use or alcohol dependence (n=76) OR (95% CI)
Gender				
Males	1.00	1.00	1.00	1.00
Females	2.34 (1.47-3.71)	1.87 (1.25-2.81)	3.26 (2.38-4.47)	0.08 (0.04-0.15)
Years of schooling	0.97 (0.89-1.05)	0.93 (0.86-1.00)	1.04 (0.98-1.11)	0.91 (0.80-1.02)
Marital status				
Married/Partner	1.00	1.00	1.00	1.00
Single	1.07 (0.69-1.67)	0.69 (0.46-1.05)	0.77 (0.55-1.07)	0.70 (0.40-1.25)
Divorced, separated or widow	2.07 (1.22-3.51)	2.12 (1.29-3.49)	1.49 (0.94-2.36)	1.27 (0.56-2.89)
Area of residence				
Urban	1.00	1.00	1.00	1.00
Rural	1.01 (0.65-1.57)	0.99 (0.66-1.49)	0.97 (0.68-1.39)	0.72 (0.40-1.32)
Socioeconomic level				
Middle high	1.00	1.00	1.00	
Middle	0.90 (0.46-1.78)	0.85 (0.46-1.58)	1.24 (0.76-2.02)	0.66 (0.24-1.86)
Middle-low	1.33 (0.66-2.68)	1.15 (0.59-2.23)	1.55 (0.91-2.64)	1.31 (0.43-4.01)
Low	1.44 (0.56-3.73)	0.84 (0.33-2.16)	2.32 (1.04-5.16)	1.77 (0.42-7.43)
	p=0.190	p=0.697	p=0.030	p=0.139
Social support [*]				
Total	0.97 (0.96-0.98)	0.97 (0.96-0.99)	0.98 (0.96-0.99)	0.99 (0.97-1.01)
Affectionate	0.77 (0.70-0.85)	0.80 (0.72-0.88)	0.93 (0.85-1.02)	0.81 (0.70-0.93)
Emotional/informational	0.96 (0.93-0.98)	0.97 (0.95-0.99)	0.96 (0.94-0.98)	0.98 (0.95-1.01)
Tangible	0.94 (0.90-0.98)	0.93 (0.89-0.97)	0.94 (0.90-0.98)	0.97 (0.90-1.05)
Positive social interaction	0.89 (0.84-0.93)	0.89 (0.85-0.93)	0.90 (0.86-0.95)	1.00 (0.92-1.08)

[*]The ORs of the socio-demographic factor covariates were adjusted for the total score of social support. The ORs for the social support subscales were adjusted for all the covariates in the analyses, but not for the other subscales of social support.

Table 4: Association of depression and anxiety with somatic symptoms.

	Moderate or severe depression		Moderate or severe anxiety	
	%(n)	OR (95% CI)	%(n)	OR (95% CI)
Without or mild burden of somatic symptoms*				
Total (n=373)	3.0 (11)	1.00	6.7 (25)	1.00
Male (n=189)	2.1 (4)	1.00	6.4 (12)	1.00
Female (n=184)	3.8 (7)	1.00	7.1 (13)	1.00
Moderate or severe burden of somatic symptoms				
Total (n=423)	30.7 (130)	14.21 (7.50-26.93)	35.0 (148)	7.34 (4.63-11.62)
Male (n=98)	24.5 (24)	17.55 (5.71-53.97)	28.6 (28)	6.59 (3.03-14.31)
Female (n=325)	32.6 (106)	12.2 (5.48-27.12)	36.9 (120)	7.93 (4.27-14.76)

*Reference group.
The ORs were adjusted for years of schooling, residence area, socioeconomic level and BMI.

Table 5: Effect of somatic symptoms in functional impairment.

	Unadjusted effect	Effect adjusted for socio-demographic factors*	Effect adjusted for socio-demographic factors* and psychiatric comorbidity**
Functionality			
Total	6.54 (3.07-13.94)	5.91 (2.75-12.70)	2.24 (0.96-5.25)
Male	5.26 (1.60-17.22)	5.46 (1.61-18.46)	2.58 (0.63-10.13)
Female	6.86 (2.42-19.44)	6.12 (2.14-17.54)	2.15 (0.68-6.76)

*Years of schooling, residence area, socioeconomic level and BMI.
** Depression and anxiety.