

Prevalence and Correlates of Stomach and Exhaustion Complaints in a Municipal Context: A Population Based Study

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Received: 22/11/2016

Revised: 06/01/2017

Accepted: 12/01/2017

ABSTRACT

Objectives: The prevalence of somatic complaints has been found to be high across various populations in a variety of contexts. However, very few studies have been carried out at regional or municipality level. This study aimed to investigate the prevalence of stomach and exhaustion symptoms among economically active residents of Gävle municipality in East Central Sweden.

Methods: A total of 528 persons completed a self-administered postal questionnaire in the baseline survey of the Gävle Household, Labour Market and Health Outcomes (GHOLDH) survey, which collected information on somatic complaints using the Giessen Complaint List (GCB-24) among persons aged 18–65 years. Descriptive and multivariate regression analyses were performed.

Results: The study found a high prevalence of stomach and exhaustion somatic symptoms among women than men, the not employed than employed as well among those in the age group 55–65 years of age. In addition results of the regression analysis found that income and female sex were statistically significantly associated with stomach complaints and income with exhaustion complaints.

Conclusion: The prevalence of stomach and exhaustion somatic complaints was higher among women, the unemployed and the oldest age group. Also, the study found a strong statistically significant relationship between stomach complaints and income.

Key words: Gävle municipality, stomach and exhaustion complaints; correlates.

INTRODUCTION

The prevalence of somatic complaints has been found to be high across various populations in a variety of contexts. [1-10] In addition, somatic complaints have been found to vary by age. [1,8,11] For instance in Germany, in a study representative of the whole population (persons aged 18 to 60 years), Schumacher and Brähler found that 67.4 per cent

reported headaches, 61.9 per cent back pain, 57.2 neck pain and 54 per cent tiredness and 50.8 percent exhaustion. [12] In New Zealand Petri et al found that symptom reporting in the previous seven days was common with 38 per cent back pain, 36 per cent fatigue, 35 per cent headache and 34 per cent joint pain. [2] Somatic complaints have also been found to be associated with age, [1,8,11] socioeconomic status, [13-15] increased health

care use [16] poor health status, [17,18] poor functional status, [19,20] and sickness absence [8,21] independent of the symptoms aetiology.

In Sweden, other studies have investigated the prevalence of various somatic symptoms in the population [22-24] but none in Gävle Municipality which consistently has shown poor health outcomes as compared to the national average. [25] Therefore this study aims to investigate the prevalence of stomach and exhaustion symptoms among economically active residents of Gävle municipality.

METHODS

Population and design

The study was carried out in Gävle Municipality (in east central Sweden) with a total population of 92,681 inhabitants distributed across 17 localities. [26] The study used pooled data from the first participants of the first and second waves (cross-sectional design) of the Gävle household income, labour dynamics and health outcome survey (GHOLDH survey) conducted between April and June 2012 (First wave) and August –September 2014 (Second Wave). Both waves were carried out in collaboration with Statistics Sweden, which administered the data collection and performed data entry. The survey waves started with the development of a research protocol and the development and piloting of the questionnaire. After, for each wave the questionnaire was tested for user friendliness in a pilot study that included 40 individuals and was subsequently reviewed with the help of the research team at Statistics Sweden. Emphasis was put on confidentiality and participants' rights. In both waves, the surveys, the selection of subjects were carried out using the Total Population Register of Gävle and taking into consideration all residents of Gävle who were 18–65 years of age. A total sample of 528 individuals (first entries to the survey in 2012 and 2014) were selected (response rates of 55 per cent in 2012 and 52 per cent in 2014). In both waves, the core questionnaire was similar and collected

demographic information as well as detailed information on employment and working conditions, workplace conditions, income, health (physical and psychological), health behaviour, healthcare use and well-being, and family formation from household members aged 18–65 years. More on the GHOLDH survey methodology can be found elsewhere. [27,28]

Ethical approval

The study was approved by the Regional Ethical Committee in Uppsala.

Measurement of variables

Dependent variable

In this study, stomach and exhaustion somatic complaints are the dependent variables. In the survey, somatic complaints were measured using the short version of the Giessen Complaint List (GGB-24), which consists of 24 items (graded from 1 – “not at all“ to 5 – “very much”) about various somatic complaints. [29] The total score amounts to 96 and the items can be divided into 4 sub-scales (exhaustion, gastrointestinal, cardiovascular, and musculoskeletal). High scores correspond to high levels of somatic and exhaustion complaints. In this study, GGB stomach and exhaustion was dichotomized as having or not somatic and exhaustion symptoms. Scores 6-8 were no symptoms and 9-30 with somatic symptoms.

Independent variables

The main independent variables were yearly individual income, employment status, age and sex. In this study individual income was dichotomized as low income 0-299 Thousand SEK and high income more than 300 thousand SEK. Employment status was dichotomised as employed and not employed. Age was defined using three groups, 18-39; 40-54 and 55-65 years, respectively and sex as male and female.

Statistical analyses

The overall survey sampling, data collection and data processing, including the calculation of survey weights, were performed by Statistics Sweden. The

separate survey weights were calculated for responding individuals and households, including weights for sampling probabilities as well as calibration weights for non-response rates. In this study, the relation between education and employment status with somatic stomach and exhaustion complaints was assessed using descriptive and logistic regression analysis. The multivariate logistic regression analysis only included variables that showed some association with the two dependent variables. All analyses were carried out using the survey-freq and the survey-logistic statistical procedures in SAS 9.4 software. [30] Individual survey weights were used, together with households as cluster variable.

The analysis included diagnostics of model fit.

RESULTS

In the sample, 49 per cent of women and 34 per cent of men reports stomach complaints and 79.6 per cent of men and 68.6 per cent men reported exhaustion. Respondents in the age group 55-65 years reported more stomach and exhaustion complaints with 43.7 per cent and 75.9 per cent respectively. Furthermore, there was a high prevalence of exhaustion and stomach complaints among individuals with no employment as well those with low yearly income (see Tables 1 and 2).

Table 1. Distribution of stomach complaints across the variables included in the study, GHOLDH survey 2012-2014

Variables	GBB N	Stomach Complaints		Chi2*
		No (6-8) %	Yes (9-30) %	
Age				0.4981
18-39	177	24.6	75.4	
40-54	164	30.4	69.6	
55-65	172	24.1	75.9	
Sex				0.0195
Men	257	31.4	68.6	
Women	256	20.4	79.6	
Employment status				0.1654
Employment	382	28.4	71.6	
No employment	93	19.4	80.6	
Total income last year				0.0128
0-299 tkr	190	19.9	80.1	
300 tkr or more	292	32.7	67.3	

*p-value: Pearson's Chi-Square test was used to compare the prevalence of the single stomach and exhaustion somatic complaints across the variables included in the sety. (p < 0.05 level).

Table 2. Distribution of exhaustion complaints across the variables included in the study, GHOLDH survey 2012-2014

Variables	GBB N	Exhaustion Complaints		Chi2*
		No (6-8) %	Yes (9-30) %	
Age				0.4981
18-39	177	24.6	75.4	
40-54	164	30.4	69.6	
55-65	172	24.1	75.9	
Sex				0.0195
Men	257	31.4	68.6	
Women	256	20.4	79.6	
Employment				0.1654
Employment	382	28.4	71.6	
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Correlates of stomach and exhaustion somatic complaints

Results of the multivariate logistic regression analysis showed a statistically significant association between stomach complaints with being female and with low-

yearly income. Compared to those with high income, those with low yearly income had a risk of 1.85 (CI 1.07-3.20) and compared to their male counterparts women had a risk of stomach complaints of 2.07 (1.23-3.47). For exhaustion complaints, regression

results showed a statistical significance only for income, with those with low yearly income having a risk of 1.91 (CI 1.01-3.61) (see Table 3).

Table 3. Odds ratios (OR) with 95% CI of the relationship between yearly income with stomach and exhaustion complaints, Gävle household and health outcomes survey pooled data 2012-2014.

Variable	Stomach Complaints		Exhaustion Complaints	
	OR	95% CI	OR	95% CI
Yearly income				
0-299 Thousand Kr	1.85	(1.07-3.20)	1.91	(1.01-3.61)
300 Thousand Kr	1		1	
Age				
18-39	1		1	
40-54	0.63	(0.35-1.12)	0.82	(0.44-1.53)
55-65	0.94	(0.50-1.77)	1.08	(0.55-2.13)
Gender				
Men	1		1	
Women	2.07	(1.23-3.47)	1.34	(0.79-2.28)
Employment				
Employed	1		1	
Not employed	1.88	(0.94-3.77)	1.03	(0.44-2.24)

DISCUSSION

This study found a high prevalence of stomach and exhaustion somatic symptoms among women than men, the unemployed than employed as well among those in the age group 55-65 years of age. In addition results of the regression analysis found income and female sex were statistically significantly associated with stomach complaints and income with exhaustion complaints. For instance, Beutel and colleagues reported age-associated increases for exhaustion, cardiovascular and musculoskeletal complaints (but not gastrointestinal).^[31] Further, the same study found that age, unemployment and income were important predictors of somatic complaints.^[31] Another study that reviewed the effects of occupational stress on gastrointestinal tract found that among workers, the combination of stress, negative emotions and personality patterns (anxiety, depression) had an impact on the gastrointestinal tract. The authors argued that jobs can produce fatigue, chronic mental anxiety, privation, chronic mental anxiety, anxiety, long history of tension, frustration, psychological disturbance or emotional conflict which in turn can produce ulcers.^[32] Also, in a study of socioeconomic inequalities in bodily pain over the life cycle in Britain, Germany and Australia, Jones et al reported a strong socioeconomic inequality in bodily pain as

measured by education, household income and occupational class.^[33] Bytzer and colleagues study reported an association between low-socioeconomic status and gastrointestinal symptoms.^[34] Regarding increase of somatic symptoms by age, available studies have found contradictory results with some indicating increase by age and others not.^[35]

Our results of strong association between low income and stomach complaints might be explained by stress levels experienced by individuals with low-yearly income (as they strive to make ends meet). It is suggested that chronic exposure to stress may lead to pain and other digestive disorders.^[36] Similarly, low yearly income was associated with increased odds of exhaustion which some studies point to an involvement of stress within possible underlying mechanisms.^[37]

Strengths and limitations of the study

In our study the measurement of stomach and exhaustion complaints was made using the GBB-24, a well validated instrument in population based studies across Europe.^[29] However, the study is not without limitations. In order to avoid small cell analysis, the study only included covariates which showed some relationship or gradient with the dependent variables stomach and exhaustion complaints. Furthermore due to small sample size it was not possible to have several subdivisions

(beyond 2 categories) within variables such as employment and income. This study only included the cross sectional data of the Gävle household and health outcomes survey Wave 1 and Wave 2 thus it is not possible to make any causal links.

CONCLUSIONS

The prevalence of stomach and exhaustion somatic complaints was high among women, the unemployed and those in the oldest age group. Also, the study found a strong statistically significant relationship between stomach complaints and income.

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How to cite this article: Macassa G, Walander A, Hiswåls A et al. Prevalence and correlates of stomach and exhaustion complaints in a municipal context: a population based study. *Int J Health Sci Res.* 2017; 7(2):253-258.
