LUND UNIVERSITY

Depression and anxiety in Swedish primary health care: prevalence, incidence, and risk factors.

Lejtzén, Nadja; Sundquist, Jan; Sundquist, Kristina; Li, Xinjun

Published in:
European Archives of Psychiatry and Clinical Neuroscience

DOI:
10.1007/s00406-013-0422-3

2014

Link to publication

Citation for published version (APA):
Lejtzén, N., Sundquist, J., Sundquist, K., & Li, X. (2014). Depression and anxiety in Swedish primary health care: prevalence, incidence, and risk factors. *European Archives of Psychiatry and Clinical Neuroscience*, *264*(3), 235-245. https://doi.org/10.1007/s00406-013-0422-3

Total number of authors:
4

General rights
Unless other specific re-use rights are stated the following general rights apply:
Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.
• Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
• You may not further distribute the material or use it for any profit-making activity or commercial gain
• You may freely distribute the URL identifying the publication in the public portal

Read more about Creative commons licenses: https://creativecommons.org/licenses/

Take down policy
If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

LUND UNIVERSITY

PO Box 117
221 00 Lund
+46 46-222 00 00

Download date: 19. Dec. 2025

Depression and anxiety in Swedish primary health care: prevalence, incidence and risk factors

Nadja Lejtzén[a], Jan Sundquist[a,b], Kristina Sundquist[a, b], Xinjun Li[a,*]

[a]Center for Primary Health Care Research, Lund University, Sweden

[b]Stanford Prevention Research Center, Stanford University School of Medicine, California, USA

Words in abstract: 203

Words in text: 3 459

*Correspondence to:

Dr Xinjun Li

Center for Primary Health Care Research

Lund University

Clinical Research Centre (CRC), building 28, entrance 72,

Jan Waldenströms gata 35

Skåne University Hospital

SE-205 02 Malmö, Sweden

E-mail: xinjun.li@med.lu.se

Abstract

Objectives: The aim of this study was to estimate the prevalence and incidence of mood disorders, anxiety disorders, and stress- and adjustment disorders in primary health care in Sweden, and to analyse the relationship between socioeconomic and demographic factors and incidence of these disorders.

Methods: Prevalence and incidence data on the study population was retrieved from a Swedish primary health care database. A cohort study design was used to examine the incidence of, and risk factors for, mood disorders, anxiety disorders, and stress- and adjustment disorders. Cox regression models were used in the statistical analyses.

Results: The overall 12-month prevalence of these clinically diagnosed disorders was 2.4 % (3.2 % in women and 1.5 % in men). The overall incidence was 18.4 per 1,000 person-years. The strongest sociodemographic risk factors for these disorders were female gender (HR = 2.04), low family income (HR = 1.52), living in a large city (HR = 1.37), and age 35-44 years (HR = 1.20).

Conclusions: This large-scale study examined the prevalence and incidence of common psychiatric disorders diagnosed in primary health care, as well as the potential influence of sociodemographic factors on these disorders. The information obtained is useful for clinicians in primary health care and decision-makers.

Key words: anxiety, depression, incidence, prevalence, primary health care, socioeconomic status, risk factors.

Background

Mood disorders (e.g. depression), anxiety disorders, and stress- and adjustment disorders are serious conditions that cause great suffering and negatively affect quality of life. If left untreated, there is a risk of chronic disease, recurrence and death by suicide [1]. Several studies have also pointed out that depression and anxiety are highly comorbid [2-4] as well as common. The World Health Organization (WHO) conducted a study in 14 countries to estimate the 12-month prevalence of these disorders. Anxiety disorders were the most common, with a 12-month prevalence in European countries ranging from 5.8 to 12.0 %. Mood disorders had a 12-month prevalence of 3.6-9.1 % in European countries [5]. Large epidemiological studies in the Netherlands and Norway gave similar prevalence estimates [6, 7]. Studies conducted in the United Kingdom estimated the incidence of depression and anxiety in primary health care to be 13.9 and 9.7 per 1,000 person-years, respectively [3, 8]. In Belgium, incidence rates of depression diagnosed in primary health care were found to be 7.2 and 14.4 per 1,000 person-years in men and women, respectively [9].

A number of epidemiological studies of depression and anxiety have been conducted in Sweden [10-12]. The Lundby study was a prospective cohort study of mental disorders with a follow-up time of 50 years. It showed that the annual incidence of depression was 4.3 per 1,000 person-years in men and 7.6 per 1,000 person-years in women [10]. Two questionnaire-based studies, performed in waiting rooms in primary health care centres in Sweden, found that between 3.7 and 6.2 % of patients had symptoms of depression and between 11.8 and 13.5 % had symptoms of anxiety. The authors concluded that depression and anxiety may be underdiagnosed and discussed possible screening methods in primary health care. However, no clinical assessment of the

patients' mental status was made - the diagnoses were solely based on the survey answers [11, 12]. Furthermore, the National Board of Health and Welfare in Sweden recently evaluated screening methods for depression and anxiety and found that they have few benefits and were not recommended for use in the general population [1]. As the prevalence and incidence of clinically diagnosed depression and anxiety in primary health care have not been studied thoroughly, further studies on this topic are needed.

Mood disorders, anxiety disorders, and stress- and adjustment disorders together account for a large part of the disease burden in Sweden. In addition to the disease burden for the individual, the costs for the society are substantial and consist mostly of long periods of sick leave. According to a report from the Swedish Social Insurance Agency in 2009, depression and anxiety were among the 25 diseases with the largest sickness insurance costs, together accounting for 20.6 % (12,077 million Swedish crowns, SEK) of the total costs [13]. It is therefore important to identify risk factors of common psychiatric disorders in order to properly implement early primary preventive measures in certain risk groups. For example, previous research has found that 18.5 and 8.1 % of depression and anxiety in women and men, respectively, could be explained by socioeconomic inequalities in health and is thus avoidable [14].

The general aim of this study was to estimate the prevalence and incidence of mood disorders (e.g. depression), anxiety disorders, and stress- and adjustment disorders in primary health care in Sweden. Another aim was to analyse the relationship between socioeconomic and demographic factors and incidence of these disorders in primary health care.

Methods

Data was retrieved from a Swedish primary health care database that was linked to several national Swedish registers provided to us by Statistics Sweden, the Swedish government-owned statistics bureau, and the National Board of Health and Welfare. The primary health care database contains clinical information between 2001 and 2007 on around one million individuals registered at 75 primary health care centres in Stockholm County and the middle parts of Sweden. These data were linked to the Swedish Total Population Register (provided by Statistics Sweden) in order to ascertain individual-level socioeconomic status (income and educational level). The final link was made by adding individual-level data from the Swedish Cause of Death Register, the Psychiatric Outpatient Care Register and the Swedish Hospital Discharge Register, the last of which records dates of hospitalisation and hospital diagnoses for psychiatric disorders since 1964. All linkages were performed using the individual national identification number that is assigned to each resident in Sweden for their lifetime. This number was replaced by a serial number in order to preserve anonymity.

Participants

All individuals listed in the primary health care database aged 25-74 years at baseline (1st Jan, 2002) were included in the study - a total of 626,870 individuals. Of these, 20,281 individuals were excluded due to missing information on family income.

Prevalence: The primary health care database was used to assess the 12-month prevalence of the outcome variables in the year 2002. Data for the whole year was used in order to avoid any seasonal variation in the outcome variables. Each individual was only counted as a case once.

Incidence: For the estimation of incidence rates, we performed a washout that excluded patients with any of the outcome variables in the 1 or 5 years before the start of the study period. The following individuals were washed out: 1) individuals with a diagnosis between 1st Jan 2001 and 31st Dec 2001 in the primary health care database or in the Psychiatric Outpatient Care Register; and 2) individuals with a diagnosis in the Swedish Hospital Discharge Register between 1st Jan 1997 and 31st Dec 2001. By this procedure, 14,810 individuals were washed out. The remaining 591,779 individuals were included in the analysis. They were followed from 1st Jan 2002 until the first diagnosis of the outcome variable or until the individual was censored in case of death, emigration or the end of the study period (31st Dec 2007), whichever came first.

Variables

Outcome variables: The outcome variables were prevalence or incidence of (1) mood disorders, (2) anxiety disorders, and (3) stress- and adjustment disorders, diagnosed according to the 10th revision of the International Classification of Diseases (ICD-10).

Prevalence: ICD-10 codes F32, F33, F34, F38, and F39 were used to assess mood disorders; F40, F41, and F42 were used to assess anxiety disorders; and F43 was used to assess stress- and adjustment disorders.

Incidence: ICD-10 codes F32, F34, F38.0, F38.8, and F39 were used to assess mood disorders; F40, F41, and F42 were used to assess anxiety disorders; and F43 was used to assess stress- and adjustment disorders. ICD-10 codes of recurrent disease (F33 and F38.1) were not used, ensuring that the data obtained was as close as possible to the true incidence. The diagnostic groups (1) mood disorders, (2) anxiety disorders, and (3) stress- and adjustment disorders were analysed together as well as separately.

Individual variables: Individual variables were assessed at baseline (Jan 1st 2002) using data from the Total Population Register.

Sex: male or female.

Age: age ranged from 25 to 74 years and was categorised into 10-year groups: 25-34, 35-44, 45-54, 55-64 and 65-74. Individuals younger than 25 were not included because many individuals in those ages are still students or live at home and are thus not independent from their parents. In addition, individuals older than 74 were not included because of their higher risk of other co-morbidities, such as dementia or multiple chronic illnesses, which might influence their risk of psychiatric symptoms of depression and/or anxiety.

Family income was divided into four quartiles: low (<95,500 Swedish crowns, SEK, per year), middle low (95,500-128,400 SEK per year), middle high (128,500-173,600 SEK per year) and high (>173,600 SEK per year). Information on family income was obtained from the Total Population Register. Family income was calculated as the annual family income divided by the number of family members, that is, individual family income per capita. The income parameter also took into consideration the ages of the people in the family and used a weighted system whereby small children were given lower weights than adolescents and adults.

Education: educational attainment was classified as follows: 1) completion of compulsory school or less (≤ 9 years); 2) practical high school or some theoretical high school (10-12 years); and 3) completion of theoretical high school and/or college/university (>12 years).

Marital status: 1) married/cohabiting; 2) single/divorced/widowed.

Urban/rural status: 1) large cities; 2) middle-sized towns; and 3) small towns/rural areas.

Statistical analysis

Prevalence estimations: Prevalence was calculated using the number of cases as the numerator. After exclusion of individuals with missing data on family income, the total population in the Primary Health Care Database aged 25-74 in 2002 was used as the denominator. Prevalence was calculated according to sex, age group and the other individual variables. 95 % confidence intervals (CIs) were calculated for the prevalence estimates.

Incidence estimations: Person-years at risk were calculated from the start of the study period (Jan 1st 2002) until the end of the study period (Dec 31st 2007) or until the first ICD diagnosis, death or emigration, whichever came first. Incidence was calculated as the number of new cases divided by the total person-time at risk. It was calculated for the whole sample, but also according to sex and age group. 95 % CIs for the incidence rates were calculated.

Analysis of risk factors: The relationships between the individual variables and the outcome variables were analysed with Cox regression models. Cox proportional hazard models are used to study the potential effects of the variables on the time a specified event needs to occur, in this case the first diagnosis of the outcome variable. An advantage with this model is that individuals that are censored also contribute to the analysis with their time under risk in the study [15]. First, univariate models were performed for each variable. Next, bivariate regression analysis was performed with age included in the model. Finally, a multivariate Cox regression model including all variables was calculated. The Cox regression models were performed for the total sample but also stratified by sex. The groups chosen as reference groups (hazard ratio (HR) =1) were: men, educational level >12 years, high income, being

married/cohabiting, living in a small town/rural area and age group 25-34 years.

The statistics program STATA version 11 was used to perform the analysis.

Ethics

This study was approved by the Ethics Committee of Lund University, Sweden.

Results

Prevalence: The study population in 2002 comprised 606,589 individuals. 19,283 cases of mood disorders, anxiety disorders, and stress- and adjustment disorders were identified (5,775 men and 13,508 women). Table 1 shows the population size, number of cases and 12-month prevalence of mood disorders, anxiety disorders, and stress- and adjustment disorders. The overall prevalence was 2.4 % (95 % CI 2.4-2.5). The prevalence in men and women was 1.5 % (95 % CI 1.5-1.6) and 3.2 % (95 % CI 3.2-3.3), respectively. The highest overall prevalence was found in women, the 35-54 age group, the lower income groups and the lower educational groups as well as among those who were single/divorced/widowed and/or lived in urban areas. Figure 1 shows age-specific prevalence rates by sex and age. The highest prevalence rates were seen in women aged 35-54 years.

Incidence: The study population comprised 591,779 individuals between 25 and 74 years. A total of 50,681 individuals (15,893 men and 34,788 women) were identified as cases during the study period (Table 2). The overall incidence of mood disorders, anxiety disorders, and stress- and adjustment disorders was 18.4 per 1,000 person-years (95 % CI 18.3-18.6). The incidence for men and women was 11.8 per 1,000 person-years (95 % CI 11.6-12.0) and 24.8 (95 % CI 24.5-25.0), respectively. The incidence patterns by the different variable categories were similar to the pattern for the

prevalence rates. For example, the highest incidence rate was found in women. Figure 2 shows incidence rates by sex and age. The highest incidence rates were seen in women aged 35-54 years.

Cox regression analysis: Table 3 shows the univariate, bivariate and multivariate Cox regression models for mood disorders, anxiety disorders, and stress- and adjustment disorders (analysed together). In the univariate analysis, the highest risk was seen in women; their risk was about twice as high compared with men (HR 2.06, 95% CI 2.02-2.10). In the lowest income group, the risk of mood disorders, anxiety disorders, and stress- and adjustment disorders was almost 70 % higher than in the highest income group. The univariate analyses also revealed that individuals with lower educational levels, those aged 35-54 years, single/divorced/widowed and those living in urban areas had higher HRs than their respective reference group. When age was included in the model, i.e., the bivariate model, the HRs remained almost unaltered. In the multivariate model, after all the variables had been included simultaneously, most of the HRs changed only slightly.

Additional analysis was performed with the Cox regression models stratified by sex (data not shown). The risk patterns for each variable showed similar HRs among men and women in the univariate, bivariate, and multivariate Cox regression analysis.

Table 4 shows multivariate Cox regression models for each of the three outcome variables, analysed separately. Some differences appeared compared with the overall analyses in Table 3. For example, age was not associated with anxiety disorders and marital status was not associated with stress- and adjustment disorders. Low income

seemed to be more strongly associated with mood disorders (HR = 1.78) and anxiety disorders (HR = 1.92) than with stress- and adjustment disorders (HR = 1.31). Living in a large city seemed to be more strongly associated with stress- and adjustment disorders (HR = 1.54) than with mood disorders (HR = 1.33) and anxiety disorders (HR = 1.30). The highest HR was observed for stress- and adjustment disorders among women (HR = 2.51).

Discussion

The present study provided new clinical data on prevalence and incidence of mood disorders, anxiety disorders and stress- and adjustment disorders in Swedish primary health care. The strongest sociodemographic risk factors for these common mental disorders were female gender, low socioeconomic position, middle age, living in an urban area and being single/divorced/widowed.

It is not straightforward to compare our data on prevalence and incidence rates of mood disorders, anxiety disorders and stress- and adjustment disorders with those of previous studies [3, 8, 9]. For example, previous studies in primary health care settings in Sweden reported prevalence rates of 12.5-19.7 % [11, 12, 16] of these disorders. In our study, the prevalence was much lower; the overall 12-month prevalence rate was 3.2 % in women and 1.5 % in men. However, previous studies used screening tools to identify symptoms of depression and anxiety in primary health care settings from which they estimated the prevalence and incidence rates [11, 12, 16]. Screening patients for depression and anxiety in primary care settings has been suggested as an instrument for primary prevention. However, screening was not recommended in a recent report from

the National Board of Health and Welfare in Sweden, mainly because such surveys and targeted questions may generate false-positive results. In addition, screening has not led to better treatment [1]. It is important to keep in mind that screening cannot be used to estimate the "true" prevalence or incidence in the population [11, 12, 16]. The data from the present study estimated the prevalence and incidence rates of clinically diagnosed cases of mood disorders, anxiety disorders and stress- and adjustment disorders in Swedish primary health care. However, a previous study suggested that only 25 % of the cases of depression and anxiety are identified in primary health care in Sweden [11].

Female gender was the strongest risk factor for these common mental disorders. In addition, when the data was stratified by sex and analysed in the bivariate regression models (data not shown), the risk patterns showed that the included risk factors seem to affect men and women in a similar way. That women are at higher risk than men of suffering from common psychiatric disorders, such as depression and anxiety, has been shown in many previous studies [6, 9, 17-20], and the reasons for this difference has been discussed. For example, many women do not have the same opportunities as men in today's society. This gender inequality may contribute to the incidence of depression [21]. Compared to other countries, Sweden is a relatively equal society. However, there are still gender inequalities [22], with women being more likely to combine a career with housework and thus being more vulnerable to stress. There are also biological and hormonal differences between men and women that could contribute to the observed gender differences in mental health. For example, women have an increased risk of developing depression after childbirth, i.e., post-partum depression [23-25]. For this reason, the National Board of Health and Welfare in Sweden has recommended to examine this risk group for depression 6-8 weeks after delivery [1]. Unfortunately, post-

partum depression does not have its own ICD code and the number of cases in the present study is therefore unknown. Men are, however, overrepresented in the statistics for suicide [26]. For every suicide in a Swedish woman, there are 2.6 suicides in Swedish men [27]. Treatment with antidepressants may be one of the reasons why the number of suicides has decreased in the population [28]. If men are less likely to seek medical care for psychiatric disorders than women, they may be at greater risk of suicide due to depression than women as they will not obtain necessary medical treatment and therapy [29].

Low family income was also a strong risk factor for mood disorders and anxiety disorders in the present study. In previous Swedish studies, unemployment and economic hardship were associated with a higher risk of depression or anxiety [16, 17]. Having a low income may cause concern for the future and financial stress that could lead to depression or anxiety. A low income can also be the result of chronic medical conditions that make it difficult to work, thus predisposing these individuals to depression, anxiety and stress-related disorders. In a meta-analysis, low socioeconomic status was associated with depression and persistence of depression over time [30]. In our study, low educational level was also a risk factor. This is in line with a meta-analysis, which showed that for every additional year of education, the risk of depression decreased [30].

The rates of mood disorders, anxiety disorders and stress- and adjustment disorders peaked at age 35-54 years. This is a time in life when many people have a family and are in the middle of their careers, which may lead to stress. Being single, divorced or widowed was also associated with a somewhat higher risk of mood and anxiety

disorders. This is in line with previous studies [17, 31]. Having a partner is an important part of a person's social network, which is in turn may protect people from depression and anxiety.

This study has some limitations. For example, the way diagnoses of, for example, depression and anxiety are made can vary between male and female patients and/or between persons with different socioeconomic status. In addition, this study did not detect everyone with depression and anxiety; it only detected those who sought primary health care and received a clinical diagnosis.

The present study also has a number of strengths. For example, one strength of this study is the large study population of almost 600,000 individuals that yielded more than 50,000 incident cases. To the best of our knowledge, no other study of this size has previously been performed in primary health care. Data on the study population were obtained from a primary health care database, which contains clinical information about all adult individuals registered at 75 different primary health care centres. Thus, the obtained results are likely to reflect the current situation in primary health care in Sweden together with the fact that the data are relatively new. Moreover, only 3 % of the individuals were excluded from the study population due to missing data on family income. Another strength of the study was its cohort design, which made it possible to obtain information on the predictors at baseline, and to follow the individuals until the first incident of mood disorders, anxiety disorders and stress- and adjustment disorders. This increases the possibility to draw causal inferences about the predictors.

Conclusion

This large-scale study examined the incidence and prevalence of clinically diagnosed mood disorders, anxiety disorders and stress- and adjustment in primary health care in Sweden. The results showed that female gender, low socioeconomic position, middle age, living in an urban area and being single/divorced/widowed were significant risk factors for these common mental disorders. These risk factors may be considered when encountering patients in primary health care in Sweden. The results from the present study may also be used by decision-makers as a basis for allocating primary health care resources in Sweden.

CONFLICT OF INTEREST STATEMENT

There are no conflicts of interest.

ACKNOWLEDGEMENTS

This work was supported by grants to Jan Sundquist from the Swedish Research Council and National Institute of Drug Abuse (R01 DA030005) as well as ALF funding from Region Skåne awarded to Jan Sundquist and Kristina Sundquist.

Figure legends

Figure 1. Age-specific 12-month prevalence of mood disorders, anxiety disorders, and stress- and adjustment disorders by sex.

Figure 2. Age-specific incidence rate of mood disorders, anxiety disorders, and stress- and adjustment disorders by sex.

References

1. Socialstyrelsen: The National Board of Health and Welfare. Nationella riktlinjer för vård vid depression och ångestsyndrom 2010 -stöd för styrning och ledning (in Swedish). 2010.
2. de Graaf R, Bijl RV, Smit F, Vollebergh WA, Spijker J: Risk factors for 12-month comorbidity of mood, anxiety, and substance use disorders: findings from the Netherlands Mental Health Survey and Incidence Study. *The American journal of psychiatry* 2002, 159:620-629.
3. Martin-Merino E, Ruigomez A, Johansson S, Wallander MA, Garcia-Rodriguez LA: Study of a cohort of patients newly diagnosed with depression in general practice: prevalence, incidence, comorbidity, and treatment patterns. *Prim Care Companion J Clin Psychiatry* 2010, 12:PCC.08m00764.
4. Roca M, Gili M, Garcia-Garcia M, Salva J, Vives M, Garcia Campayo J *et al*: Prevalence and comorbidity of common mental disorders in primary care. *Journal of affective disorders* 2009, 119:52-58.
5. Demyttenaere K, Bruffaerts R, Posada-Villa J, Gasquet I, Kovess V, Lepine JP *et al*: Prevalence, severity, and unmet need for treatment of mental disorders in the World Health Organization World Mental Health Surveys. *JAMA : the journal of the American Medical Association* 2004, 291:2581-2590.
6. Bijl RV, Ravelli A, van Zessen G: Prevalence of psychiatric disorder in the general population: results of The Netherlands Mental Health Survey and Incidence Study (NEMESIS). *Social psychiatry and psychiatric epidemiology* 1998, 33:587-595.

7. Kringlen E, Torgersen S, Cramer V: A Norwegian psychiatric epidemiological study. *Am J Psychiatry* 2001, 158:1091-1098.

8. Martin-Merino E, Ruigomez A, Wallander MA, Johansson S, Garcia-Rodriguez LA: Prevalence, incidence, morbidity and treatment patterns in a cohort of patients diagnosed with anxiety in UK primary care. *Fam Pract* 2010, 27:9-16.

9. Boffin N, Bossuyt N, Declercq T, Vanthomme K, Van Casteren V: Incidence, patient characteristics and treatment initiated for GP-diagnosed depression in general practice: results of a 1-year nationwide surveillance study. *Family practice* 2012, 29:678-687.

10. Mattisson C, Bogren M, Nettelbladt P, Munk-Jorgensen P, Bhugra D: First incidence depression in the Lundby Study: a comparison of the two time periods 1947-1972 and 1972-1997. *Journal of affective disorders* 2005, 87:151-160.

11. Bodlund O: Anxiety and depression as a hidden problem in primary health care. Only one case in four identified (in Swedish). *Lakartidningen* 1997, 94:4612-4614, 4617-4618.

12. Nordström A, Bodlund O: Every third patient in primary care suffers from depression, anxiety or alcohol problems. *Nordic journal of psychiatry* 2008, 62:250-255.

13. Försäkringskassan: The Swedish Social Insurance Agency. Vad kostar olika sjukdomar i sjukförsäkringen? Kostnader för sjukpenning i sjukskrivningar (över 14 dagar) samt sjukersättning och aktivitetsersättning år 2009 fördelat på diagnos (in Swedish). *Social Insurance Report 2011:4* 2011.

14. Ljung R, Peterson S, Hallqvist J, Heimerson I, Diderichsen F: Socioeconomic differences in the burden of disease in Sweden. *Bulletin of the World Health Organization* 2005, 83:92-99.

15. Kleinbaum DG, Klein M: *Survival Analysis: A Self-Learning Text*. 2nd edition. New York: Springer; 2005.

16. Allgulander C, Nilsson B: A nationwide study in primary health care: One out of four patients suffers from anxiety and depression (in Swedish). *Lakartidningen* 2003, 100:832-838.

17. Molarius A, Berglund K, Eriksson C, Eriksson HG, Linden-Boström M, Nordström E *et al*: Mental health symptoms in relation to socio-economic conditions and lifestyle factors--a population-based study in Sweden. *BMC public health* 2009, 9:302.

18. De Graaf R, Bijl RV, Ravelli A, Smit F, Vollebergh WA: Predictors of first incidence of DSM-III-R psychiatric disorders in the general population: findings from the Netherlands Mental Health Survey and Incidence Study. *Acta psychiatrica Scandinavica* 2002, 106:303-313.

19. Gater R, Tansella M, Korten A, Tiemens BG, Mavreas VG, Olatawura MO: Sex differences in the prevalence and detection of depressive and anxiety disorders in general health care settings: report from the World Health Organization Collaborative Study on Psychological Problems in General Health Care. *Archives of general psychiatry* 1998, 55:405-413.

20. Kessler RC, Berglund P, Demler O, Jin R, Merikangas KR, Walters EE: Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication. *Archives of general psychiatry* 2005, 62:593-602.

21. Piccinelli M, Wilkinson G: Gender differences in depression. Critical review. *The British journal of psychiatry : the journal of mental science* 2000, 177:486-492.

22. Hausmann R, Tyson L, Zahidi S: The Global Gender Report 2011. *World Economic Forum* 2011.

23. SBU: The Swedish Council on Technology Assessment in Health Care. Treatment of depression 2004 (in Swedish). *Report 166/1* 2004.

24. Josefsson A, Berg G, Nordin C, Sydsjo G: Prevalence of depressive symptoms in late pregnancy and postpartum. *Acta obstetricia et gynecologica Scandinavica* 2001, 80:251-255.

25. Escriba-Aguir V, Royo-Marques M, Artazcoz L, Romito P, Ruiz-Perez I: Longitudinal study of depression and health status in pregnant women: incidence, course and predictive factors. *Eur Arch Psychiatry Clin Neurosci* 2013, 263:143-151.

26. Hagihara A, Abe T: Effects of media reports and the subsequent voluntary withdrawal from sale of suicide-related products on the suicide rate in Japan. *Eur Arch Psychiatry Clin Neurosci* 2012, 262:245-251.

27. Jiang G, Floderus B, Wasserman D: Suicide in Stockholm county and Sweden: 1980-2008 (in Swedish) Karolinska Institutets Folkhälsoakademi. *Report 2010:30* 2010.

28. Isacsson G: Frequency of suicides reduced with 25 percent. Probably by the increased use of antidepressive agents (in Swedish). *Lakartidningen* 2000, 97:1644-1646, 1649-1650.

29. Baghai TC, Blier P, Baldwin DS, Bauer M, Goodwin GM, Fountoulakis KN *et al*: Executive summary of the report by the WPA section on pharmacopsychiatry on general and comparative efficacy and effectiveness of antidepressants in the acute treatment of depressive disorders. *Eur Arch Psychiatry Clin Neurosci* 2012, 262:13-22.

30. Lorant V, Deliege D, Eaton W, Robert A, Philippot P, Ansseau M: Socioeconomic inequalities in depression: a meta-analysis. *American journal of epidemiology* 2003, 157:98-112.

31. Scott KM, Wells JE, Angermeyer M, Brugha TS, Bromet E, Demyttenaere K *et al*: Gender and the relationship between marital status and first onset of mood, anxiety and substance use disorders. *Psychological medicine* 2010, 40:1495-1505.

Table 1. 12-month prevalence of mood disorders, anxiety disorders, and stress- and adjustment disorders in primary health care in Sweden

	Population		Mood disorders			Anxiety disorders			Stress- and adjustment disorders			All		
Variable	No	%	Cases	Prevalence (%)	95% CI	Cases	Prevalence (%)	95% CI	Cases	Prevalence (%)	95% CI	Cases	Prevalence (%)	95% CI
Sex														
Male	287275	47.4	2017	0.7	0.7 0.7	1034	0.4	0.3 0.4	1287	0.4	0.4 0.5	4338	1.5	1.5 1.6
Female	319314	52.6	4653	1.5	1.4 1.5	2005	0.6	0.6 0.7	3681	1.2	1.1 1.2	10339	3.2	3.2 3.3
Age group (years)														
25-34	152812	25.2	1196	0.8	0.7 0.8	670	0.4	0.4 0.5	1142	0.7	0.7 0.8	3008	2.0	1.9 2.0
35-44	147334	24.3	1697	1.2	1.1 1.2	822	0.6	0.5 0.6	1556	1.1	1.0 1.1	4075	2.8	2.7 2.9
45-54	124028	20.4	1641	1.3	1.3 1.4	700	0.6	0.5 0.6	1232	1.0	0.9 1.0	3573	2.9	2.8 3.0
55-64	113900	18.8	1405	1.2	1.2 1.3	518	0.5	0.4 0.5	897	0.8	0.7 0.8	2820	2.5	2.4 2.6
65-74	68515	11.3	731	1.1	1.0 1.1	329	0.5	0.4 0.5	141	0.2	0.2 0.2	1201	1.8	1.7 1.9
Educational level														
≤ 9 years	71397	11.8	877	1.2	1.1 1.3	511	0.7	0.7 0.8	627	0.9	0.8 0.9	2015	2.8	2.7 2.9
10-12 years	167643	27.6	2138	1.3	1.2 1.3	1050	0.6	0.6 0.7	1654	1.0	0.9 1.0	4842	2.9	2.8 3.0
> 12 years	367549	60.6	3655	1.0	1.0 1.0	1478	0.4	0.4 0.4	2687	0.7	0.7 0.8	7820	2.1	2.1 2.2
Marital status														
Married/cohabiting	283260	46.7	2916	1.0	1.0 1.1	1159	0.4	0.4 0.4	2240	0.8	0.8 0.8	6315	2.2	2.2 2.3
Single/divorced/widowed	323329	53.3	3754	1.2	1.1 1.2	1880	0.6	0.6 0.6	2728	0.8	0.8 0.9	8362	2.6	2.5 2.6
Urban/rural status														
Large cities	427653	70.5	4861	1.1	1.1 1.2	2165	0.5	0.5 0.5	3759	0.9	0.9 0.9	10785	2.5	2.5 2.6
Middle-sized towns	98414	16.2	1221	1.2	1.2 1.3	562	0.6	0.5 0.6	790	0.8	0.7 0.9	2573	2.6	2.5 2.7
Small towns/rural areas	80522	13.3	588	0.7	0.7 0.8	312	0.4	0.3 0.4	419	0.5	0.5 0.6	1319	1.6	1.5 1.7
Family income (in 100 Swedish crowns)														
Low (<955)	151990	25.1	2053	1.4	1.3 1.4	972	0.6	0.6 0.7	1376	0.9	0.9 1.0	4401	2.9	2.8 3.0
Middle low (955-1284)	151628	25.0	1918	1.3	1.2 1.3	947	0.6	0.6 0.7	1283	0.8	0.8 0.9	4148	2.7	2.7 2.8
Middle high (1285-1736)	151390	25.0	1554	1.0	1.0 1.1	688	0.5	0.4 0.5	1317	0.9	0.8 0.9	3559	2.4	2.3 2.4
High (>1736)	151581	25.0	1145	0.8	0.7 0.8	432	0.3	0.3 0.3	992	0.7	0.6 0.7	2569	1.7	1.6 1.8
Total	606589	100.0	6670	1.1	1.1 1.1	3039	0.5	0.5 0.5	4968	0.8	0.8 0.8	14677	2.4	2.4 2.5

CI: confidence interval

Table 2. Age-adjusted incidence rate (IR) of mood disorders, anxiety disorders, and stress- and adjustment disorders in primary health care in Sweden

Variable	Population		Mood disorders			Anxiety disorders			Stress- and adjustment disorders			All		
	No	%	Cases	IR per 1,000 person years	95% CI	Cases	IR per 1,000 person years	95% CI	Cases	IR per 1,000 person years	95% CI	Cases	IR per 1,000 person years	95% CI
Sex														
Male	282601	47.8	6405	4.8	4.7 4.9	3477	2.6	2.5 2.7	6011	4.5	4.3 4.6	15893	11.8	11.6 12.0
Female	309178	52.2	12632	9.0	8.8 9.1	6088	4.3	4.2 4.4	16068	11.5	11.3 11.7	34788	24.8	24.5 25.0
Age group (years)														
25-34	149508	25.3	4290	6.1	5.9 6.3	2656	3.8	3.6 3.9	5795	8.3	8.1 8.5	12741	18.2	17.9 18.5
35-44	143159	24.2	4955	7.5	7.3 7.7	2538	3.8	3.7 4.0	6920	10.4	10.2 10.7	14413	21.8	21.4 22.1
45-54	120423	20.3	4284	7.7	7.5 7.9	1904	3.4	3.3 3.6	5284	9.5	9.2 9.7	11472	20.6	20.2 21.0
55-64	111504	18.8	3441	6.6	6.4 6.9	1506	2.9	2.8 3.1	3325	6.4	6.2 6.6	8272	16.0	15.6 16.3
65-74	67185	11.4	2067	6.7	6.4 6.9	961	3.1	2.9 3.3	755	2.4	2.3 2.6	3783	12.2	11.8 12.6
Educational level														
≤ 9 years	69109	11.7	2476	7.9	7.6 8.2	1535	4.9	4.6 5.1	2538	8.0	7.7 8.3	6549	20.8	20.3 21.3
10-12 years	162827	27.5	5837	7.7	7.5 7.9	3036	4.1	3.9 4.2	7009	9.2	9.0 9.4	15882	21.0	20.7 21.3
> 12 years	359843	60.8	10724	6.4	6.3 6.6	4994	3.0	2.9 3.0	12532	7.6	7.5 7.7	28250	17.0	16.8 17.2
Marital status														
Married/cohabiting	277232	46.8	8390	6.6	6.4 6.7	3809	3.1	3.0 3.2	10212	8.3	8.2 8.5	22411	17.9	17.7 18.2
Single/divorced/widowed	314547	53.2	10647	7.6	7.4 7.7	5756	3.9	3.8 4.0	11867	7.9	7.8 8.1	28270	19.4	19.2 19.7
Urban/rural status														
Large cities	32495	5.5	883	5.8	5.4 6.2	369	2.5	2.2 2.7	897	6.1	5.7 6.6	2149	14.4	13.8 15.0
Middle-sized towns	165330	27.9	5360	7.0	6.8 7.1	2557	3.4	3.2 3.5	5930	7.9	7.7 8.1	13847	18.2	17.9 18.5
Small towns/rural areas	393954	66.6	12794	7.0	6.9 7.1	6639	3.6	3.5 3.7	15252	8.3	8.1 8.4	34685	18.9	18.7 19.1
Family income														
Low	146917	24.8	5908	8.6	8.4 8.8	3109	4.5	4.3 4.6	6253	8.5	8.3 8.7	15270	21.6	21.2 21.9
Middle low	147375	24.9	5246	7.7	7.5 7.9	2712	4.0	3.9 4.2	5740	8.5	8.3 8.7	13698	20.2	19.9 20.6
Middle high	148106	25.0	4435	6.4	6.2 6.6	2193	3.2	3.0 3.3	5611	8.2	8.0 8.4	12239	17.7	17.4 18.0
High	149381	25.2	3448	4.8	4.6 5.0	1551	2.2	2.1 2.3	4475	6.3	6.1 6.5	9474	13.3	13.1 13.6
Total	591779	100.0	19037	6.9	6.8 7.0	9565	3.5	3.4 3.5	22079	8.0	7.9 8.1	50681	18.4	18.3 18.6

IR: Incidence rate, CI: confidence interval

Table 3. HRs for mood disorders, anxiety disorders, and stress- and adjustment disorders (analyzed together) in primary health care. Cox regression

	Univariate model			Bivariate model (age included)			Multivariate model		
	HR	95% CI		HR	95% CI		HR	95% CI	
Age group (years)									
25-34	1						1		
35-44	1.19	1.17	1.22				1.20	1.17	1.23
45-54	1.13	1.10	1.16				1.19	1.16	1.22
55-64	0.88	0.85	0.90				1.00	0.97	1.03
65-74	0.67	0.64	0.69				0.70	0.67	0.73
Sex									
Men	1			1			1		
Women	2.06	2.02	2.10	2.08	2.04	2.12	2.04	2.00	2.08
Educational level									
≤ 9 years	1.24	1.20	1.27	1.21	1.18	1.24	1.16	1.13	1.19
10-12 years	1.26	1.23	1.28	1.23	1.20	1.25	1.20	1.18	1.22
> 12 years	1			1			1		
Marital status									
Married/cohabiting	1			1			1		
Single/divorced/widowed	1.12	1.10	1.14	1.10	1.08	1.12	1.12	1.10	1.15
Urban/rural status									
Small towns/rural areas	1			1			1		
Middle-sized towns	1.26	1.22	1.30	1.25	1.21	1.29	1.29	1.25	1.34
Large cities	1.34	1.30	1.38	1.31	1.27	1.35	1.37	1.33	1.41
Family income									
Low	1.69	1.64	1.73	1.63	1.59	1.68	1.52	1.48	1.56
Middle low	1.50	1.46	1.54	1.49	1.45	1.53	1.40	1.36	1.43
Middle high	1.32	1.28	1.35	1.31	1.28	1.35	1.25	1.22	1.29
High	1			1			1		

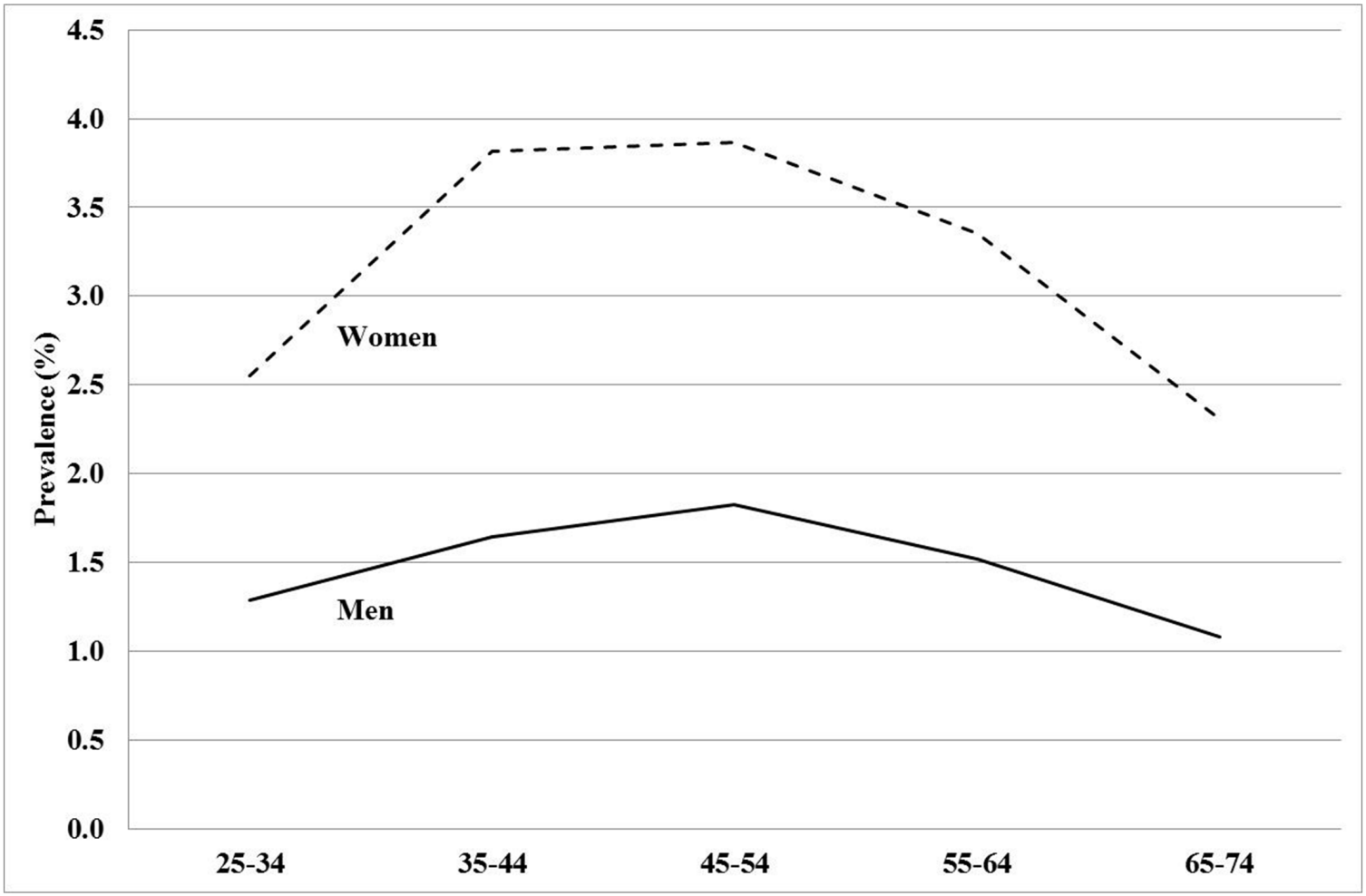
HR: hazard ratio, CI: confidence interval.

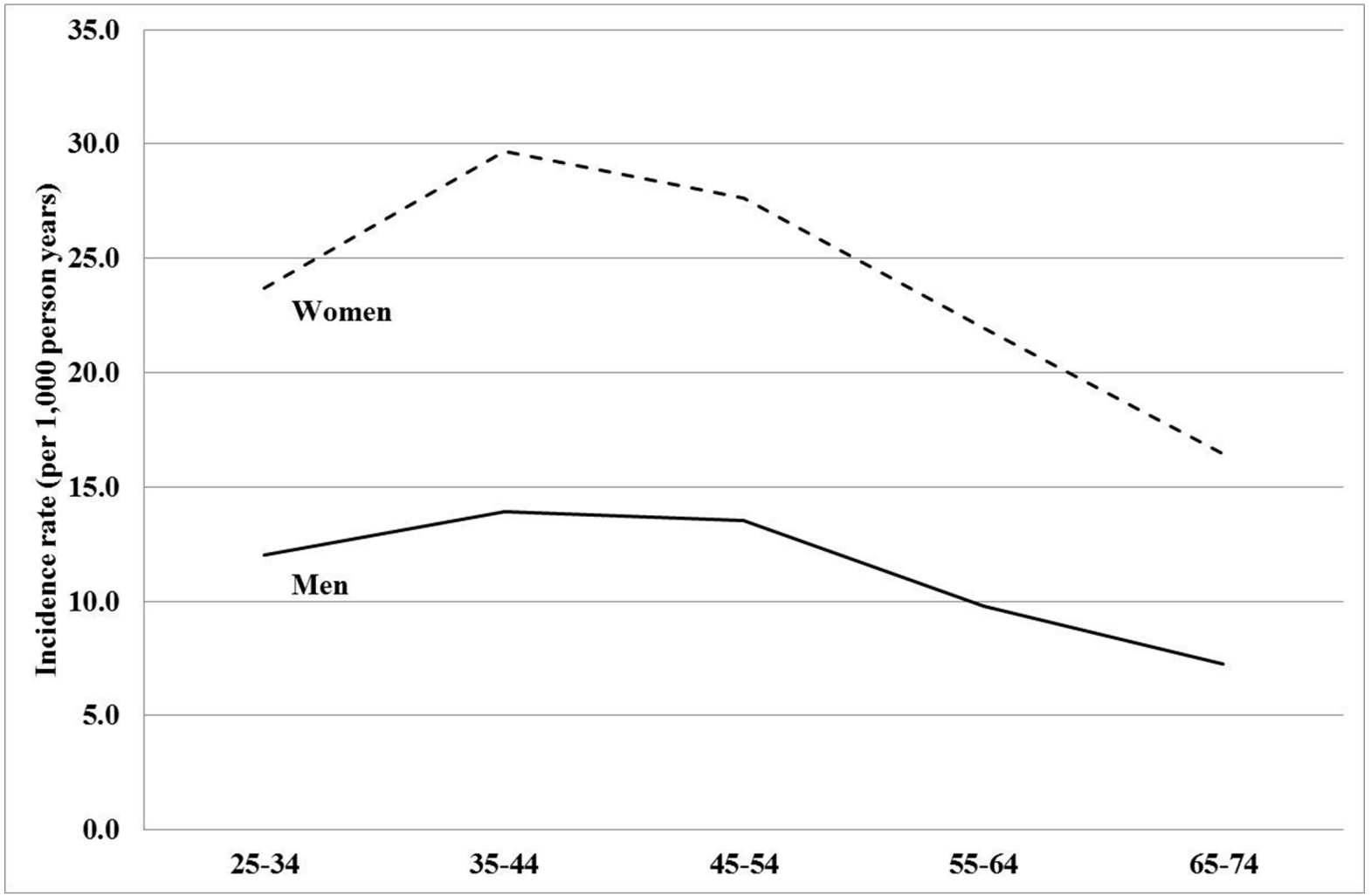
Table 4. HRs for mood disorders, anxiety disorders, and stress- and adjustment disorders (analyzed separately) in primary health care. Cox regression*

	Mood disorders		Anxiety disorders		Stress- and adjustment disorders	
	HR	95% CI	HR	95% CI	HR	95% CI
Age group (years)						
25-34	1		1		1	
35-44	1.24	1.19-1.29	1.02	0.96-1.08	1.25	1.21-1.29
45-54	1.36	1.31-1.42	0.98	0.92-1.04	1.17	1.12-1.21
55-64	1.29	1.23-1.36	0.95	0.89-1.01	0.82	0.78-0.86
65-74	1.17	1.11-1.23	0.90	0.83-0.97	0.29	0.27-0.32
Sex						
Men	1		1		1	
Women	1.82	1.77-1.88	1.62	1.55-1.69	2.51	2.44-2.59
Educational level						
≤ 9 years	1.13	1.08-1.18	1.50	1.41-1.59	1.07	1.02-1.11
10-12 years	1.13	1.10-1.17	1.28	1.23-1.34	1.22	1.18-1.25
> 12 years	1		1		1	
Marital status						
Married/cohabiting	1		1		1	
Single/divorced/widowed	1.19	1.15-1.22	1.32	1.26-1.38	0.99	0.96-1.02
Urban/rural status						
Small towns/rural areas	1		1		1	
Middle-sized towns	1.30	1.23-1.37	1.23	1.14-1.33	1.34	1.27-1.42
Large cities	1.33	1.27-1.40	1.30	1.22-1.38	1.54	1.47-1.61
Family income						
Low	1.78	1.70-1.85	1.92	1.80-2.05	1.31	1.26-1.36
Middle low	1.52	1.45-1.59	1.68	1.57-1.79	1.24	1.19-1.29
Middle high	1.27	1.22-1.33	1.37	1.29-1.47	1.21	1.16-1.26
High	1		1		1	

*: Multivariate model

HR: hazard ratio, CI: confidence interval.


4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
Prevalence (%)
Women
Men
25-34
35-44
45-54
55-64
65-74
Age at diagnosis (years)


35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
Incidence rate (per 1,000 person years)
Women
Men
25-34
35-44
45-54
55-64
65-74
Age at diagnosis (years)