

**Psychosomatic aspects of women's health-  
results from the Prospective Population Study of Women in Gothenburg**

Akademisk avhandling

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av

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The thesis is based on the following papers:

- I. Hange D, Bengtsson C, Sundh V, Björkelund C. The natural history of psychosomatic symptoms and their association with psychological symptoms: Observations from the Population Study of Women in Gothenburg. *European Journal of General Practice* 2007;13:60-66
- II. Hange D, Lissner L, Bengtsson C, Sundh V, Björkelund C. Perceived nervousness and moodiness associated with increased CVD but not cancer morbidity in pre- and postmenopausal women. Observations from the Population Study of Women in Gothenburg, Sweden. *International Journal of General Medicine* 2009;2:39-45
- III. Björkelund C, Andersson-Hange D, Andersson K, Bengtsson C, Blomstrand A, Bondyr-Carlsson D, Eiben G, Rödström K, Sjöberg A, Sundh V, Weman L, Zylberstein D, Hakeberg, M, Lissner L. Secular trends in cardiovascular risk factors with a 36-year perspective: Observations from 38- and 50-year-olds in the Population Study of Women in Gothenburg. *Scandinavian Journal of Primary Health Care* 2008;26:140-46
- IV. Hange D, Mehlig K, Lissner L, Guo X, Bengtsson C, Skoog I, Björkelund C. Perceived mental stress in middle-aged women - associations to psychosomatic symptoms, morbidity and mortality: Observations from the Population Study of Women in Gothenburg, Sweden. *Manuscript*



UNIVERSITY OF GOTHENBURG

**Psychosomatic aspects of women's health – results from the Prospective Population Study of Women in Gothenburg** (Thesis in Swedish).

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**Abstract**

**Aim:** The aim of this thesis was to study prevalence of perceived nervousness and mental stress in a female population and to investigate associations between perceived nervousness and mental stress and psychosomatic symptoms as well as mortality and morbidity. The secondary aim was to investigate the contemporaneous development of cardiovascular risk factors in women.

**Method:** The Prospective Population Study of Women in Gothenburg, Sweden was initiated in 1968-69 including 1462 women aged 60, 54, 50, 46 and 38. New examinations were conducted 1974-75, 1980-81, 1992-93, 2000-01 and 2004-05. Measures included self reported nervousness, mental stress as well as psychosomatic symptoms at baseline, risk factors as smoking, s-lipids, BMI, blood pressure and socioeconomic status.

**Results:** Women who reported perceived nervousness in the 1968-69 examination had a higher frequency of psychosomatic symptoms e.g. abdominal symptoms, asthma and headache than women without nervousness. Women who reported at least two of the symptoms nervousness/moodiness had an increased risk of dying of cardiovascular disease (CVD) also after multi-variable control (hazard ratio, HR=1.28, confidence interval, CI 1.03-1.58).

Women who reported mental stress in 1968-69 were more likely to have abdominal symptoms (odds ratio, OR=1.54, CI 1.20-1.99), headache (OR=1.71, CI 1.33-2.20), frequent infections (OR=1.73, CI 1.17-2.56) and musculoskeletal symptoms (OR=1.43, CI 1.13-1.81) than women without mental stress. Women with mental stress had an increased risk of death (OR=1.40, CI 1.06-1.85) as well as breast cancer (OR=2.19, CI 1.11-4.30) within the following 32 years.

Concerning cohort comparisons of 38- and 50-year old women, there was a significant decrease in mean blood pressure as well as in total cholesterol and triglycerides from 1968-69 to 2004-05. Physical activity in leisure time was significantly more prevalent in 2004-05 compared with 1968-69 (40 vs.15%).

**Conclusions:** Women with nervousness or mental stress had higher prevalence of psychosomatic symptoms and, under certain circumstances, higher risk of mortality during more than three decades of follow-up, than women not reporting such problems. Women's lifestyle factors have changed in a healthier direction in the last three decades, although perceived mental stress has increased.

**Keywords:** Women, psychosomatic symptoms, nervousness, mental stress, population study, mortality, cardiovascular disease, cardiovascular risk factors, life-style, physical activity