This is the published version of a paper presented at ISPO International Central European ISPO Conference 2018 Portoroz, Slovenia, 20th September 2018 – 22nd September 2018.

Citation for the original published paper:

Risk of depression following traumatic limb amputation– a general population-based cohort study  
In: ISPO International Central European ISPO Conference 2018 Slovenia (ed.),  
ISPO International Central European ISPO Conference 2018 Slovenia: Book of Abstracts Slovenia: ISPO

N.B. When citing this work, cite the original published paper.

Permanent link to this version:  
http://urn.kb.se/resolve?urn=urn:nbn:se:oru:diva-72023
RISK OF DEPRESSION FOLLOWING TRAUMATIC LIMB AMPUTATION– A GENERAL POPULATION-BASED COHORT STUDY

Helen Lindner1, Scott Montgomery2,3,4, Ayako Hiyoshi2

1Institution for Health Sciences, Örebro University, Örebro, Sweden
2Clinical Epidemiology and Biostatistics, School of Medical Sciences, Örebro University, Örebro, Sweden
3Clinical Epidemiology Unit, Department of Medicine, Karolinska Institute, Stockholm, Sweden
4Department of Epidemiology and Public Health, University College London, London, Sweden

INTRODUCTION: Traumatic limb amputation (TLA) is a sudden event that accompanies life changes in physical functioning, body image and challenges in daily lives. Amputees may experience significant levels of distress and be at risk of depression may be at risk of depression. However, evidence for depression risk after TLA has been limited because of the use of cross-sectional study design of a small or selected sample and the lack of a comparison with non-amputees. Confounding from pre-amputated occupational and individual characteristics was possible but no study has controlled for these.

AIMS: We aimed to examine whether amputation may be associated with an increased risk of depression required inpatient and outpatient hospital treatment.

METHODS: Our study population was drawn from a cohort of men (n=284,257) who underwent a compulsory conscription assessment for between 1969 and 1976. Complete data were available for 189,220 men. We followed these men from 1st January 1985, when these men were between age 29 and 34 years until the date of depression. We used the ICD codes in Swedish patient register to identify TLA (primary and secondary diagnosis) and depression after TLA (primary diagnosis). Cox regression was used to calculate hazard ratios and 95% confidence intervals [CI] for the association of amputation with depression. Age was used as the underlying time scale, and the diagnosis of amputation was included as a time-dependent exposure status, with the value zero before amputation and one after the date of amputation. Birth year, region, occupation, cognitive and physical function and stress resilience in adolescence were considered as potential confounding factors and adjusted for in the analysis.

RESULTS: In total 401 men experienced amputation between 1985 and 2009, with the mean age of amputation was age 42.5 years (SD 7.4). Those who experience amputation were more likely to have low stress resilience and cognitive function in adolescence and engaged in farming and manual work in 1985.

Cox regression produced unadjusted hazard ratio 2.61 (CI 1.62-4.21, p<0.001), i.e. 2.61 times risk of subsequent depression diagnosis for risk of subsequent depression compared with amputation-free individuals. Moderate and low cognitive function, physical fitness and stress resilience were associated with elevated risk of depression. Working for farms and manual work was also associated with higher depression risk. When the analysis was adjusted for these factors, the risk of depression after amputation changed little, 2.53 (CI 1.57-4.08, p <0.001) times risk of depression remained compared with amputation-free individuals.

CONCLUSIONS: As we hypothesized, TLA was associated with an increased risk of depression over more than two decades of follow-up of men from age 29 to 57 years. Higher levels of depressive symptoms were noted among working age amputees and our study group also comprised of working age amputees.

Future research may benefit from investigating potential influence of different amputation sites, degree, and prosthesis use involved in order to set intervention target.