Halfway review

**PhD student:** Maria Lindéus  
**Main supervisor:** Associate Professor Ali Kiadaliri  
**Co-supervisors:** Aleksandra Turkiewicz, PhD. Professor Martin Englund  
Clinical Epidemiology Unit, Orthopaedics, Department of Clinical Sciences, Lund

**Reviewers:**  
Benedict Oppong Asamoah, Senior lecturer  
Social Medicine and Global Health, Department of Clinical Sciences, Malmö  
Anna Cronström, Assistant researcher, PhD  
Sport Sciences, Department of Health Sciences, Lund

**Title:** Socioeconomic inequalities in musculoskeletal disorders outcomes and care

**Background**  
Musculoskeletal disorders are a major cause of morbidity and they can also lead to mortality. Inequalities in health are well-known, where people with lower socioeconomic status generally tend to have poorer health status and higher mortality. However, there is limited evidence on the association between socioeconomic status and outcomes in musculoskeletal disorders and this PhD project aims to fill this knowledge gap.

**Aims and methods**  
This project includes observational studies derived from registries. Individual-level data from Statistics Sweden, the Swedish National Board of Health and Welfare's Cause of Death Register and National Patient Register, the Skåne Healthcare Register and the Swedish Twin Register have been used.

Absolute and relative educational inequalities were assessed by slope and relative indices of inequality, with specific aims to  
1) assess the educational inequalities in mortality from hip and non-hip fractures.  
2) assess the association between education and all-cause and cause-specific mortality among patients with osteoarthritis (OA) in comparison to OA-free references.

The associations between education and end-stage knee and hip OA were estimated in models unmatched and matched on twin pairs, with aim to  
3) examine the total effect of education on end-stage knee and hip OA in need of OA surgery.

**Preliminary results**  
1) We found that both absolute and relative educational inequalities in hip-fracture related mortality were in favour of high educated people.

2) An inverse association between education and all-cause and cause-specific mortality was found. The magnitude of the relative inequalities in all-cause mortality was comparable in people with and without OA. The contribution of cardiovascular mortality to the absolute inequalities between low and high education were higher in patients with OA than in references.
3) We found lower hazard of knee and hip OA surgery with higher educational attainment, with generally lower estimates in stratified models. Our results imply potentially causal effect of educational attainment on the risk of OA surgery.

Significance
Given rising burden of musculoskeletal disorders in an ageing population, identifying determinant of this burden is of high importance. In order to reduce observed health inequalities, individuals’ educational attainment should be considered in disease prevention and treatment.

Dissertation publications and manuscripts


Paper 4: Changes of socioeconomic inequalities in knee and hip OA surgery over time in Sweden (analysis plan)