

## *ASSOCIATION BETWEEN SOCIOECONOMIC STATUS AND CHOICE OF TREATMENT IN CRUCIATE LIGAMENT INJURIES*

R Nordenvall<sup>1</sup>, Al Marcano<sup>1</sup>, J Adami<sup>2</sup>, M Palme<sup>3</sup>, VM Mattila<sup>1,4</sup>, S Bahmanyar<sup>2,5</sup>, L Felländer-Tsai<sup>1</sup>

1. Department of Clinical Science, Intervention and Technology, Karolinska Institutet, Division of Orthopedics and Biotechnology, Karolinska Institutet and Department of Orthopedics at Karolinska University Hospital Huddinge, Sweden

2. Clinical Epidemiology Unit, Department of Medicine, Solna, Karolinska Institutet, Sweden

3. Department of Economics, Stockholm University, Stockholm

4. Center for Pharmacoepidemiology, Department of Medicine, Solna, Karolinska Institutet, Sweden

5. Tampere University Hospital, department of Orthopedics, Tampere, Finland

### **Introduction**

The socioeconomic status (SES) of patients has been widely recognized as playing an important role in many health related situations, including orthopaedics, where higher SES has been associated with a higher utilization of surgery. However, the association between SES and cruciate ligament (CL) surgery has not been broadly studied yet. The objective of this population-based cohort study was to study the association between SES and choice of treatment (operative versus non-operative) in patients diagnosed with a CL injury.

### **Patients and Methods**

The National Swedish Patient Register identified all patients aged 15-60 years with a diagnosed CL injury between 1990 and 2010 (n=120,430). The Longitudinal Integration Database for Health Insurance and Labor Market Studies (LISA) provided information on household income and highest achieved educational level which were used as socioeconomic indices. Household income was categorized in quartiles by year of injury; level of education was based on number of total years of education, with categories for compulsory school or less, upper secondary, higher education and no educational data. Poisson regression model estimated the association.

### **Results**

As much as 30% of the patients were treated operatively. Patients within the highest quartile of household income had a statistically significant higher risk of operation than those within the lowest (Relative risk [RR] 1.23; 95% Confidence Interval [CI] 1.19-1.26). The corresponding relative risks for quartiles 2 and 3 were 1.6 and 1.8, respectively. Patients classified as highly educated had a statistically significant increased risk of being treated operatively compared with those treated non-operatively (RR 1.3; 95% CI 1.26-1.35).

**Discussion**

These findings are similar to a previous study where the odds of ACL surgery were as much as 1.4 (95% CI, 1.04-1.8) times higher among patients with higher SES. Our study confirms these results and provides a population-based validation.

**Conclusion**

Having a higher SES determined by household income or level of education increases the risk of having operative treatment after a CL injury. It is important to evaluate how the SES of patients influences the decision of whether or not to treat a CL injury operatively.