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## Short Communication

# Health disparities based on neighbourhood and social conditions: Open Comparisons—an indicator-based comparative study in Sweden



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## ABSTRACT

**Objective:** The overarching goal of the Swedish public health policy is to create the right societal conditions for good and equitable health throughout the population and to reduce avoidable health inequalities within a generation. The objective of this article is to highlight the main findings of the Open Comparisons in Public Health (OCPH) 2019 study. **Study design:** The OCPH is a longitudinal indicator-based comparative study, encompassing 39 public health indicators with results from Sweden's 21 regions and 290 municipalities. **Methods:** Descriptive statistics and 95% confidence intervals were used to compare results between municipalities, regions and time points. Correlation analysis was used to study the strength of the relationship between the results of municipalities and their socio-economic conditions.

**Results:** Across the population, levels of health are good and have, in some areas, improved over recent decades. However, some significant health disparities remain according to neighbourhood, sex, age and educational background. Health disparities related to the level of education are often larger than those between women and men, and there are larger differences within a region than between regions. Health disparities have, in some cases, increased, such as for life expectancy.

**Conclusion:** If health equity is to be achieved, leaders at all levels must collaborate and advocate for political action and local efficient public health interventions to eliminate health disparities as a result of neighbourhood and social conditions.

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## Background

Sweden is a high-income country with a population of approximately 10 million.<sup>1</sup> About 15% of the population was born in another country, and about one in five children in Sweden have a family with roots in another country. Sweden has 21 regions and 290 municipalities. In total, 85% of inhabitants live in cities. According to Statistics Sweden, the population is expected to reach 11 million in 10 years, an increase of 231,000 children and young people, 399,000 people aged 19–64 years and 309,000 people aged 65 years and older. However, the share of people aged 80 years and older will increase the most; their share is expected to increase by 255,000 people, a growth of 50%.<sup>1</sup>

The Swedish public health policy (revised and adopted in 2018) has a clear focus on equitable health throughout the population and a goal to reduce avoidable health inequalities within a generation (30 years).<sup>2</sup> The regions are political bodies; thus, they are expected to achieve this objective as part of the national policy on regional responsibility for sustainable societal development and also through the responsibility for health care.<sup>3</sup> However, the municipalities are particularly important as most of the welfare services, such as childcare, schools, social services, elderly care and support to people with disabilities, some emergency services, environmental issues, urban planning and sanitation (waste and sewage), that impact the lifelong health of an individual fall under their remit.<sup>3</sup>

The Open Comparisons Public Health (OCPH) 2019 study is an indicator-based report comparing public health across Sweden's regions and municipalities.<sup>4</sup> The report published by the Public Health Agency of Sweden,<sup>4</sup> in collaboration with the Swedish Association of Local Authorities and Regions,<sup>5</sup> focuses on 39 indicators that reflect health outcomes, as well as the underlying factors that affect health, such as education, employment, security and lifestyle habits. The regional and local results are presented in relation to the results of the whole country, as well as the distribution between different societal groups. The data have been collected from 20

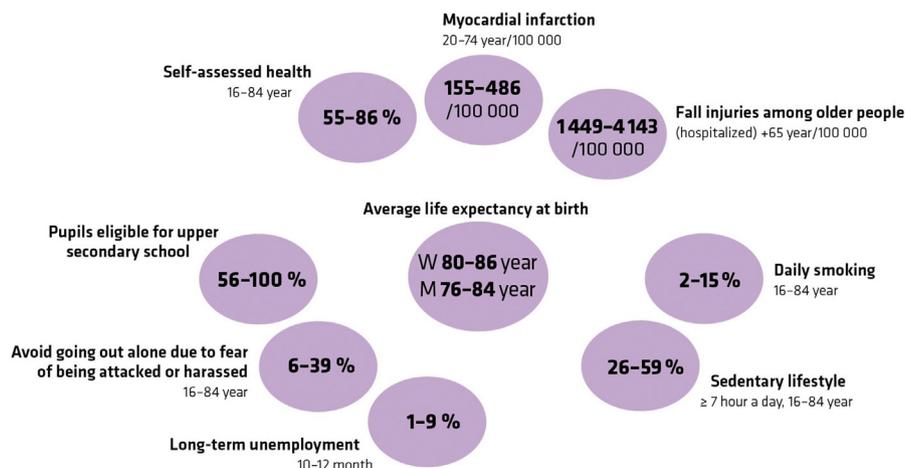
sources and include register data, as well as self-reported data collected from surveys. All the data are open statistics, available at Kolada, the Swedish database for municipal benchmarking, with a technical description available for each indicator.<sup>6</sup> The analysis in OCPH was based on descriptive statistics and 95% confidence intervals to compare results between municipalities, regions and time points. Correlation analysis, a statistical evaluation, was used to study the strength of a relationship between the results of municipalities and their socio-economic conditions.<sup>2,4</sup>

OCPH aims to stimulate public health officers, leaders and politicians at local and regional levels to encourage discussions that will facilitate efficient and strategic public health work.<sup>3</sup> The objective of this short report is to highlight the main findings of OCPH 2019.

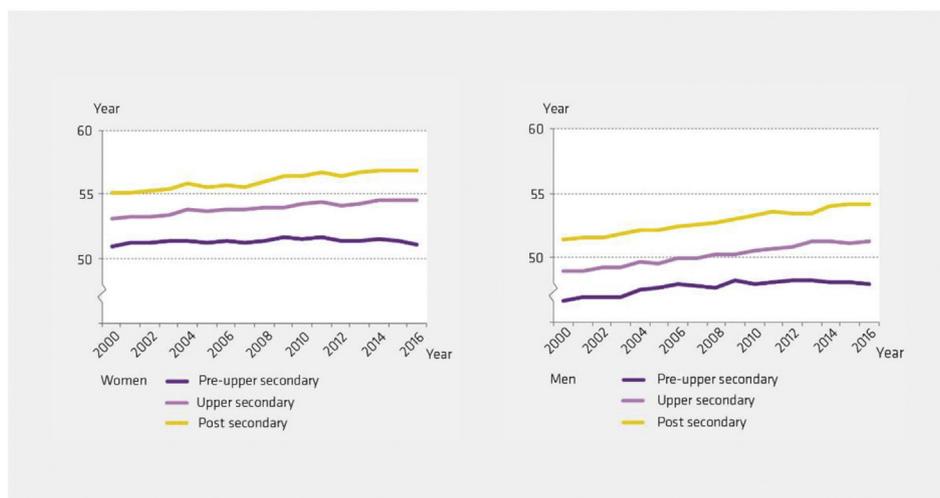
## Results

Although public health in Sweden remains strong overall, there are significant health disparities in the population that appear to be correlated with neighbourhood, sex, age and the education level. The intraregional health differences are greater than those between regions, and there are often larger health disparities between groups with differing educational levels than between women and men. These health disparities do not seem to have decreased over recent years.

Fig. 1 shows a great variation in the results between Sweden's municipalities (highest and lowest figures in 9 of the 39 indicators from OCPH 2019). Life expectancy is defined as the average number of years a population of a certain age would be expected to live, based on a set of age-specific death rates in a given year. It is a statistical measure often used to describe the overall health status of a population. Life expectancy can vary up to 8 years for men in different municipalities, and the corresponding figure for women is 6 years. For most OCPH indicators, those with pre-upper secondary education have poorer health outcomes compared with the group with postsecondary education.



**Fig. 1 – Variation in results between the municipalities in Sweden (highest and lowest figures in 9 of the 39 indicators from OCPH 2019). OCPH, Open Comparisons in Public Health.**

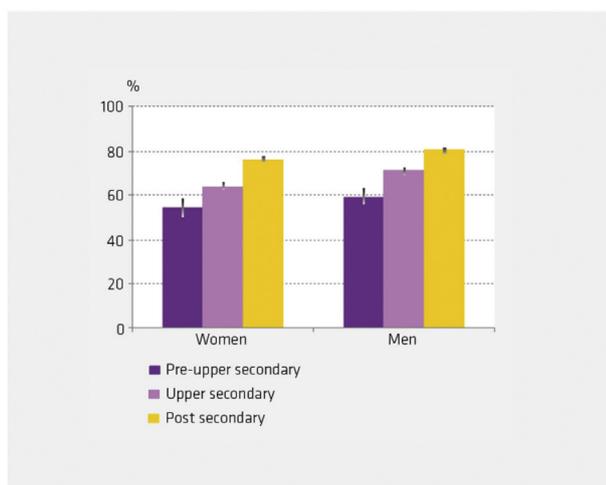


**Fig. 2 – Life expectancy at age 30 in women and men with different educational backgrounds. Source: OCPH 2019.**

In OCPH 2019,<sup>4</sup> educational background is used as a measure of socio-economic status, and the Care Need Index (CNI)<sup>7</sup> is used to describe the socio-economic conditions of municipalities. The result shows that the gap in life expectancy at the age of 30 years in women and men with different educational backgrounds continues to increase. The average life expectancy for women with pre-upper secondary education has remained rather unchanged over the period 2000–2016, whereas it has increased for those with upper secondary and postsecondary education. Similar patterns have been demonstrated for men (Fig. 2).<sup>4</sup> Such patterns are reinforced when considering the CNI of municipalities, which shows that in municipalities with low scores (i.e. socio-economically

strong), the inhabitants have longer life expectancies and vice versa (Fig. 2).<sup>4</sup>

Self-rated health is an indicator that shows how people perceive their own health. The measure has proven to be reliable as it correlates with socio-economic status and a variety of health markers in the population, including population mortality.<sup>8</sup> Self-rated health is perceived to be better for groups with higher levels of education (Fig. 3). In OCPH 2019, this pattern is corroborated further by the correlation between the CNI of municipalities, which shows that in municipalities with low scores (i.e. socio-economically strong), the inhabitants demonstrate better perceived levels of health and vice versa (Fig. 3).<sup>4</sup>



**Fig. 3 – Self-rated health (good or very good), in women and men with different educational backgrounds. Source: OCPH 2019.**

## Discussion

Social disparities in health are a matter of concern in Sweden, despite public health being strong overall. These health disparities are related to, among other things, neighbourhood, sex, age and the level of education. Therefore, this results in targets in health achievements being met numerically, in terms of the national average; however, less-privileged members of the society are left at a disadvantage.

The correlation between life expectancy and socio-economic status is well documented and discussed.<sup>9</sup> In OCPH, the level of education was used as a measure of socio-economic status. According to Östergren et al.<sup>9</sup> it is assumed that the group with only pre-upper secondary school education falls short in social comparison with the group with higher levels of education, which will likely result in a variety of health issues in the group with pre-upper secondary education. For example, although the average educational attainment increases in Sweden and in many other European countries, those with low levels of

education may be increasingly disadvantaged, not only because of the composition of the group but also because how this group is perceived and thereby treated in the society.<sup>9</sup>

Although equal access to health services, which are designed to meet the needs of all, is critical, social factors are known to be ultimately powerful determinants of health.<sup>10,11</sup> Therefore, there may be scope to rephrase the ‘causes of the causes’ mentioned by Sir Michael Marmot and the World Health Organization<sup>12</sup> to the ‘causes of the structures’ defined by Øversveen and Eikemo.<sup>11</sup> Health inequalities are interconnected with inequalities in education, income, power and status, caused by societal structures (i.e. political and economic structures).<sup>11</sup> Governmental policies are important structural links, but according to OCPH 2019, the reduction of health disparities also requires measures in each local community. The daily lives of people unfold in local communities, and it is in these communities that we need to find efficient public health solutions. Thus, improving public health involves working structurally, taking factors such as education, employment, housing and living environment into account. Nevertheless, public services and actions need to be tailored to reach everyone and pay special attention to the needs of those at greatest risk of poor health, based on social conditions.

### Conclusion

The results in OCPH 2019 demonstrate great variations between Sweden's municipalities and that health disparities related to the level of education are often larger than those between women and men. These health disparities do not seem to have diminished and have, in some cases increased, such as for life expectancy. Further work is needed if the overarching goal of the Swedish public health policy—to create the right societal conditions for good and equitable health throughout the population and to reduce avoidable health inequalities within a generation—is to be achieved. Leaders at all levels must collaborate and advocate for political actions alongside local efficient public health solutions to eliminate disparities in health as a result of neighbourhood and social conditions.

### Author statements

#### Ethical approval

Not applicable. The statistics in this article are available at Statistics Sweden—a government agency that brings official statistics to the public (<https://www.scb.se/en/>).

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Nothing to declare.

### Competing interests

The first, third and last authors were employed by the Public Health Agency of Sweden, and the second and third authors were employed by the Swedish Association of Local Authorities and Regions.

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### Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.puhe.2019.06.003>.