

More obesity among the less educated in rich countries

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In rich countries, obesity is more common among the lower educated, whilst in poor countries, obesity is more common among the higher educated. This was shown in a new study from the Norwegian Institute of Public Health, which confirms earlier research.

Previous studies have shown that the number of people with obesity increases with the [gross domestic product](#) (GDP) of a country. Previous research has also indicated that education can be an important factor in this context. The aim of this new study was to explore the assumption from previous studies that obesity is linked to GDP and education, and to include new data from several different [countries](#).

The researchers have included more extensive and up-to-date data than what has been done in previous studies. In total, data from 70 countries was included. Previous research as focused mostly on low - and medium-cost countries. The present study also included a number of high-cost countries.

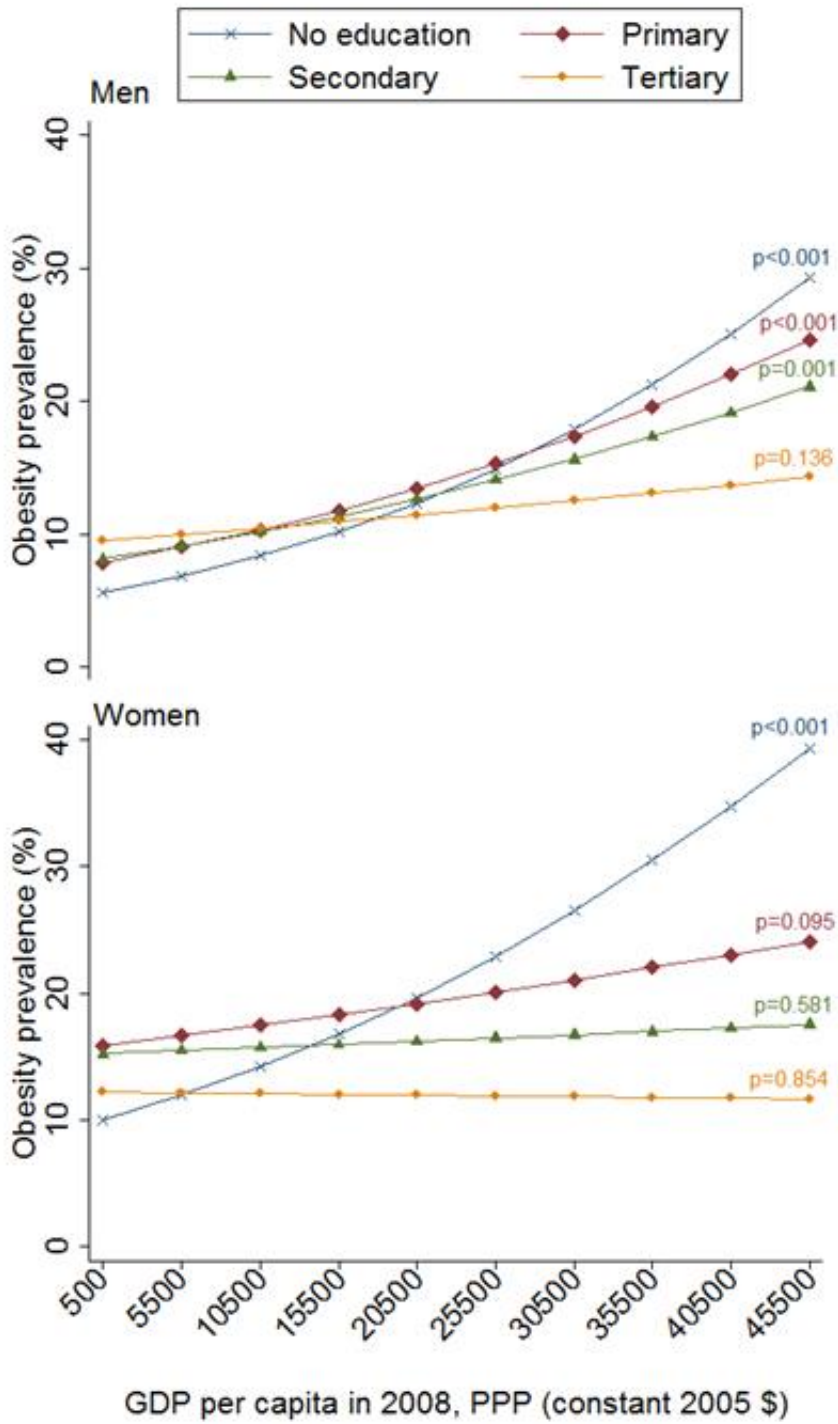
Relationship between education, obesity and GDP

The results from this study confirm that there is an association between obesity, education and GDP. The prevalence of obesity increases with rising GDP, but only among individuals with lower levels of education. There is no significant increase in obesity among those with higher education.

This means that:

- In countries with low GDP there is more obesity among those with high education.
- In countries with high GDP there is more obesity among those with low education.

The study also found that the relationship was somewhat more marked among women than among men.



Possible explanations

"When countries become richer, changes in living conditions occur that predominantly affect the weight of those with low education", says lead author Jonas Minet Kinge.

Kinge is a researcher at the Norwegian Institute of Public Health and also Associate Professor at the Department of Health Management and Health Economics at the University of Oslo.

"For example, earlier literature suggests that low education in poorer countries is associated with limited resources available for excess food consumption, and more physically demanding work. These conditions limit obesity among those with low education in developing countries," says Kinge.

"In rich countries with economies based largely on service and technology industries, most people can afford calorie-rich foods and there are, overall, fewer jobs with physically demanding work. This boosts the prevalence of obesity among those with lower education in high GDP countries," explains Kinge.

The reason why the association was found to be more pronounced in women than in men is less clear. The study did not test whether the differences between the sexes are significant. But it may be that women and men often have different educational backgrounds and professions, and that they experience different norms and ideals from their society.

About the study

The researchers collected data about individuals' education, age, gender, height and weight from 70 different countries. They used different statistical methods to analyze the association between obesity and GDP

by education.

A major strength of this study is that it included many countries and that it has used both absolute and relative educational categories.

It is important to emphasize that the study has not studied causality. The researchers cannot determine, for example, whether it is [education](#) and GDP that affect obesity or vice versa. Neither can they rule out that the results are influenced by other factors not included in the study. Another limitation of the study is that it used self-reported height and weight, which is not optimal.

Nevertheless, Kinge believes the results from this study may be useful for health promotion work, emphasizing the interplay between social and economic factors and [obesity](#). Perhaps especially in developing countries, health promotion efforts should take these factors into consideration.

The study was conducted in collaboration between researchers at the Norwegian Institute of Public Health, the University of Oslo and the University of Bergen in Norway, and Columbia University in the USA.

More information: "Educational inequalities in obesity and gross domestic product: evidence from 70 countries." *J Epidemiol Community Health* jech-2014-205353 Published Online First: 15 July 2015 [DOI: 10.1136/jech-2014-205353](#)

Provided by Norwegian Institute of Public Health

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