Being overweight costs society far more than obesity, Norwegian researchers say

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Credit: Andres Ayrton from Pexels

Norwegians are gaining weight. People who are "just" overweight cost the health system much more than people who are obese.

"We often hear that obesity represents a high cost for both individuals and society because it increases the risk of health problems. All in all, however, the costs associated with being overweight are much higher," says NTNU researcher Christina Hansen Edwards.

Since the 1980s, Norwegians have become increasingly heavier. Over the past 40 years, the percentage of people with obesity, i.e., a body mass index (BMI) of over 30, has increased significantly. It is currently estimated that almost one in four Norwegians is obese, which is comparable to obesity rates throughout Europe.

However, the number of people who are "only" overweight has also increased. During the period 1980 to 2000, the average BMI of the population increased by one point every decade.

"We are seeing a shift in the entire population towards a higher BMI. People with a BMI in the 'normal range' have also gained weight," says Edwards.

The researchers have now looked at the relationship between BMI and costs in the specialist health service.

"Although the individual costs are highest for people who are obese, the total costs for society are highest in relation to people who are overweight, since there are many more people who are overweight than obese," says Gudrun Maria Waaler Bjørnelv, a researcher at NTNU's Department of Public Health and Nursing.

Population-level measures needed

In other words, although the risk of disease is higher if your BMI is more than 30, the overall risk of disease in the entire population will be greater for those with a BMI of over 25. This is because the vast majority of people find themselves within this range on the scale.

Edwards thinks it is important for politicians to be aware of this when managing health and societal resources.

"People with obesity need to receive good treatment from the health services. However, in order to ease the burden of disease and the costs of overweight and obesity in the entire population, individualized treatment should be combined with effective measures at the population level," says Edwards.

The study is based on figures from the HUNT Study—a longitudinal population health study in Norway. It shows that 75% of men and 61% of women were overweight or obese.

Of these, 3.7% of men and 6.6% of women had a BMI of over 35, while 22.4% of men had a waist measurement of more than 102 cm, and 23.4% of women had a waist measurement of over 88 cm.

"At the individual level, we saw that an increase in BMI resulted in the greatest increase in expenses for the specialist health services among those who previously had the highest BMI. If one compares a man with a BMI of 37 to a man with a BMI of 38, on average, the latter will result in NOK 2110 (US $198) more in average costs for the specialist health services per year. A similar difference in men with a BMI of 27 and 28 respectively will only result in an increase of NOK 293 (US $28)," Edwards said.

Similar comparisons among women show differences of NOK 1306 (US $122) and NOK 277 (US $26), respectively. However, when the researchers look at the figures for the population as a whole, the picture changes.

"At the societal level, by contrast, we see that the largest increase in costs for the specialist health services was due to changes in BMI in people that were 'only' overweight, i.e., they had a BMI of between 25 and 30, as well as in those with mild obesity, i.e. a BMI of between 30 and 35. This was true for both women and men," says Bjørnelv.

She emphasizes that the point of the comparison is not primarily to save the health service money, but that the specialist health service costs reflect the burden of disease, both in individuals and in society.

"People with obesity should not feel ashamed that they cost society money," Bjørnelv said.

"Obesity is often portrayed as expensive for society," he said, referring to the Norwegian Broadcasting Corporation's series "A fat life."

In this TV series, host Ronny Brede Aase uses himself and his own body to shed light on questions about obesity, lifestyle and health. In the series, Aase says that he "an expenditure," which Bjørnelv says is not necessarily correct.

"People with obesity should not feel ashamed that they cost society money. Although they are at higher risk of disease, the highest specialist health service costs result from those who are overweight.

"We don't want people who are overweight to feel ashamed because of that, but we need to be reflective in how we shed light on the issue and how we deal with this as a society," says Bjørnelv.

Recent research has shown that people with a high BMI have an increased likelihood of being stigmatized and discriminated against, also in the health care system.

"This can cause people with a high BMI to avoid the use of health services, so that they receive poorer health services and the relationship between doctor and patient is damaged. This is a field where there is a clear need for more research, for example on how stigma affects the costs of health services in the longer term," Bjørnelv said.

Consensus on risk

The researchers are also keen to emphasize that BMI as a unit of measurement is primarily important when looking at overweight and obesity in groups, and not in each individual.

"BMI alone is not a suitable measuring unit at an individual level, but at a population level it can give a good picture of obesity and overweight," Edwards said.

She clarifies that the results in the study are average costs for different BMI values, and that there are variations around this average. A single person with a given BMI will therefore not be able to use these results to say anything about own costs.

It is also not a given that being overweight leads to health problems.

"This is where the variation comes in. A person with a BMI of 33 does not necessarily have higher costs for health services than a person with a BMI of 23. But if we look at the average of all people with a BMI of 33 and 23, then people with a BMI of 33 have higher costs for health services than those with BMI of 23," she said.

BMI is thus primarily a useful unit of measurement at the population level, and less useful for individuals.

"In our study, we investigated the relationship between BMI and health care costs," she said.

Although this relationship can be influenced by many different factors, there is broad agreement among researchers that an increase in BMI increases the risk of a number of diseases, Edwards said.

It would therefore be appropriate to implement measures that target the entire population the researchers concluded.

"The challenge then is finding out which measures work," says Edwards.

So, what should health policymakers do? Bjørnelv and Edwards believe it is important that studies are conducted on the effectiveness of national public health measures.

"The measures that were introduced as part of the Smoking Act were unpopular when they were introduced, but eventually this turned around completely. Similar measures, such as advertising bans, taxation, and access restrictions on unhealthy food, could have been tested to overcome the obesity pandemic. This requires brave politicians who dare to take controversial decisions," Edwards said.

The research is published in the *Journal of the Norwegian Medical Association*.

More information: Christina Hansen Edwards et al, Healthcare costs associated with overweight and obesity at an individual versus a population level—a HUNT study, *Journal of the Norwegian Medical Association* (2023). DOI: 10.4045/tidsskr.22.0726

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