

Genes, depression and life satisfaction

October 25 2012

(Medical Xpress)—Vulnerability to major depression is linked with how satisfied we are with our lives. This association is largely due to genes.

This is the main finding of a new twin study from the Norwegian Institute of [Public Health](#) in collaboration with the University of Oslo. The researchers compared longitudinal information from identical and fraternal twins to determine how vulnerability to major depression is associated with dispositional (overall) lifetime satisfaction.

Previous studies have systematically shown that life satisfaction is considerably stable over time. People who are satisfied at any one point in life are often also satisfied at other times in their lives. This stability—the dispositional life satisfaction—is often said to reflect an underlying positive mood or a positive disposition. Previous studies have also shown that people with such a positive disposition are less depressed, but very few studies have examined the mechanisms behind this relationship.

Results

- Both men and women who met the criteria for lifetime major depression (15.8% and 11.1% respectively) reported lower life satisfaction.
- 74% of the relationship between major depression and life satisfaction could be explained by genes.
- The remaining association (26%) could be explained by unique environmental factors.

- The researchers also calculated the [heritability](#) of dispositional life satisfaction and major depression separately. The heritability of dispositional life satisfaction, which has not previously been reported, was estimated to be 72%. In other words, it is largely genes that explain why we differ in our tendency to be satisfied and content with our lives.
- Major depression had a heritability of 34%, which is highly consistent with previous studies.

"The stable tendency to see the bright side of life is associated with lower risk of major depression because some genetic factors influence both conditions", says researcher Ragnhild Bang Nes from the Division of Mental Health. Genes involved in satisfaction and positivity thus give protection against major depression. Nes is the main author of the study that was recently published in the *Journal of Affective Disorders*.

Susceptibility to both depression and overall life satisfaction is partly influenced by the same set of genes, but is also influenced by genes that are unique to each.

"The heritability figures mean that 72% of the individual differences in overall satisfaction, and 34% of the differences in depression, are caused by genes. These figures do not provide information on the importance of specific genes for an individual's life satisfaction or risk of major depression. Traits and propensities like dispositional life satisfaction and vulnerability to major depression are not heritable in themselves. Heritability refers to the importance of genes for explaining the differences between people and the estimates may vary across time and place", explains Nes.

Although the heritability of major depression was lower than that of life satisfaction, this does not necessarily mean that life satisfaction is far more heritable than depression. The researchers used questionnaire data

from two time points to measure dispositional life satisfaction, and a single clinical interview to measure the prevalence of lifetime major depression. The use of only a single assessment to measure depression may partly explain why the heritability of depression is so much lower than life satisfaction.

Can we prevent depression by promoting life satisfaction?

"We found that depression and life satisfaction did not share as many environmental factors as [genetic factors](#). This means that environmental factors of importance to life satisfaction (for example, activities and interventions that make you happy and content) only to a small extent protect against depression", says Nes.

"Although our underlying disposition to life satisfaction and positivity appears to be relatively stable, small actions in our daily lives may provide temporary pleasures, and these are also important. How we spend our time is tremendously important for our happiness and well-being. It is therefore important to encourage and follow up on activities that make us happy".

Nes adds: "To some extent, positive experiences may also accumulate over time and create favorable conditions for our quality of life".

About the study

The analyses were based on approximately 1500 twin pairs (both identical and fraternal) from the NIPH twin panel. Identical twins share 100% of the genetic material, while fraternal on average share 50% of their genes —meaning that they are genetically like other siblings and first-degree relatives. By comparing how similar identical and fraternal co-twin are in life satisfaction and risk of [major depression](#), scientists can determine the extent to which variation and covariation is due to

[genes](#) and environmental influences. The resulting figures reflect the importance of genetic and environmental influences on differences between individuals and do not provide information about the exact relationship between depression and [life satisfaction](#) in individuals. At the individual level genetic and [environmental factors](#) are dependent on one another in a complex interaction.

What is heritability?

More information: *Journal of Affective Disorders*. DOI: [dx.doi.org/10.1016/j.jad.2012.05.060](https://doi.org/10.1016/j.jad.2012.05.060)

Provided by Norwegian Institute of Public Health

Citation: Genes, depression and life satisfaction (2012, October 25) retrieved 10 April 2024 from <https://medicalxpress.com/news/2012-10-genes-depression-life-satisfaction.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.
