Does shame cause depression or anxiety in adolescence?

Evidence from a longitudinal cohort study of twins and sibling pairs
This is an observational, longitudinal cohort study. Adults registered with GENESiS 12-19 who had indicated they had children were contacted and invited to participate. Twins were recruited from a separate source, in collaboration with the UK Office of National Statistics.
Critical appraisal 101

“Not all evidence is created equal”

Ben Djulbegovic

Broadly, we can think of three possible explanations for the results of any research study:

1. Bias
2. Chance
3. The truth

The more we can rule out 1 and 2, the more confident we can be that we’re looking at 3.
Why do we obsess about bias?

- There are numerous instances of harm from believing biased claims
- A worryingly large proportion of research is affected by bias
- What’s true in a study may not be true in real life.
Reality check No 1

Because they are observational studies, cohort studies can only identify correlations between things, not prove that one causes the other.

Credit: XKCD
https://xkcd.com/552/
When we do lots of analyses, there’s a danger we will be influenced by the play of chance, especially when we rely on p values.

We can usually think of plausible story to explain observed correlations.
The research questions:
In children and young people aged 12-19,
1. Does shame cause depression or anxiety?
2. How do genetic and environmental influences affect the impact of shame?
Checklist for aetiology or harm studies

<table>
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The research question

Population
- Children and young people (CYP) aged 12 to 19
- Twins and siblings
- Recruited from families in the GENESiS study and from an Office of National Statistics database of twins
- Few details re demographics of the sample
The research question

“Exposure”
• Shame was measured at Time 1 using a modified instrument.

Outcomes
• Depression and anxiety were measured at Time 1 and again at Time 2, on average 2 years later.
Results

2,685 CYP provided data at Time 1; 1,618 at Time 2
• a 60% follow-up rate.

Shame scores were:
• moderately correlated with depression and anxiety at baseline
• and with depression at Time 2
• weakly correlated with anxiety at Time 2

Twin data showed that:
• shame was moderately heritable
• environmental influences more strongly predicted the impact of shame than genetic influence
# Checklist for aetiology or harm studies

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For more awkward questions to ask about aetiology studies, [this critical appraisal checklist](http://example.com) is open access and published by Glasgow University.

For more information about genetics and anxiety, [this blog from King’s College London](http://example.com) provides an accessible overview.
Strengths and limitations

+ Large sample size
+ Prospective design
+ Cross-validation of the data

- Cannot rule in or rule out a causal link
- Drop-out rate
- The outcome measures may not be measuring what we think they are
Conclusions

We have some caveats around the strength and direction of causation.
However, the findings are consistent with the hypothesis that shame influences the development of depression and anxiety in CYP.
Although shame has genetic components, the influence of environment and experience is important, and possibly greater than genetics on how shame affects depression and anxiety.
Shame may be a useful therapeutic target for prevention.
Questions for the researchers

• Can you tell us more about the adjusted shame instrument?
• How worried are you about the drop-out rate?
• How does this evidence on shame sit alongside the other findings of the GENESiS study?
• What do you think are the next steps for research?