



The Association  
for Child and Adolescent  
Mental Health

# CAMHS around the Campfire



*Virtual journal club*

**#CAMHScampfire**



The Mental Elf

**#CAMHScampfire No.8**  
**20<sup>th</sup> July 2021**

**Does shame cause depression or anxiety  
in adolescence?**

Evidence from a longitudinal cohort study of  
twins and sibling pairs



The Association  
for Child and Adolescent  
Mental Health

# CAMHS around the Campfire



Virtual journal club  
#CAMHScampfire



The Mental Elf

Check for updates

The Journal of Child  
Psychology and Psychiatry



*Journal of Child Psychology and Psychiatry* \*\*:\* (2021), pp \*\*-\*\*

doi:10.1111/jcpp.13465

## Aetiology of shame and its association with adolescent depression and anxiety: results from a prospective twin and sibling study

Milica Nikolić,<sup>1</sup> Laurie J. Hannigan,<sup>2,3</sup> Georgina Krebs,<sup>4,5</sup>  Abram Sterne,<sup>6</sup>  
Alice M. Gregory,<sup>7</sup> and Thalia C. Eley<sup>4</sup> 

<sup>1</sup>University of Amsterdam, Amsterdam, The Netherlands; <sup>2</sup>Lovisenberg Diaconal Hospital, Oslo, Norway; <sup>3</sup>University of Bristol, Bristol, UK; <sup>4</sup>King's College London, London, UK; <sup>5</sup>National and Specialist OCD and Related Disorders Clinic for Young People, South London and Maudsley NHS Foundation Trust, London, UK; <sup>6</sup>Jerusalem Counseling, Jerusalem, Israel; <sup>7</sup>Goldsmiths, University of London, London, UK

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.



The Association  
for Child and Adolescent  
Mental Health

# CAMHS around the Campfire



*Virtual journal club*

#CAMHScampfire



The Mental Elf

## 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.



The Association  
for Child and Adolescent  
Mental Health

# CAMHS around the Campfire



Virtual journal club

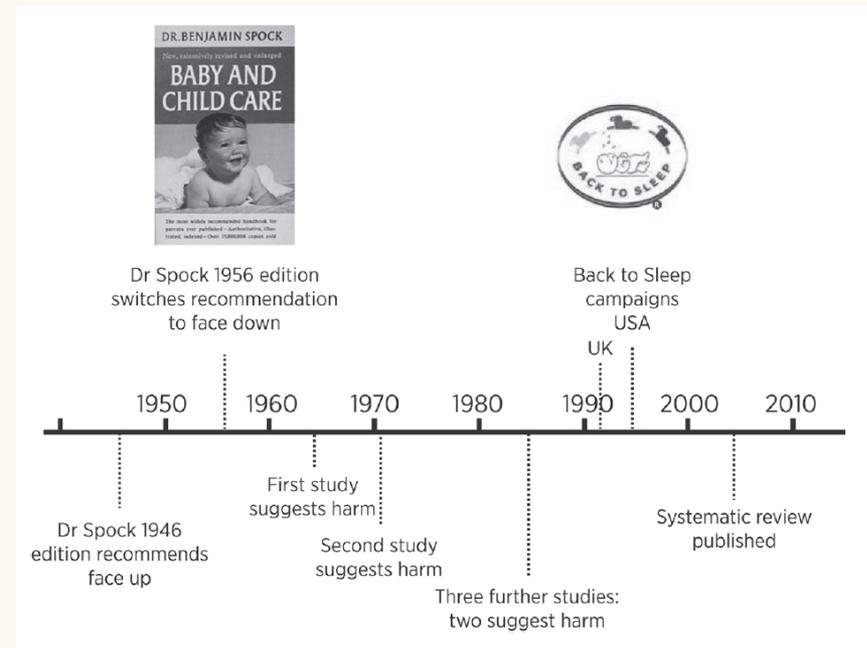
#CAMHScampfire



The Mental Elf

## 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.





The Association  
for Child and Adolescent  
Mental Health

# CAMHS around the Campfire



*Virtual journal club*

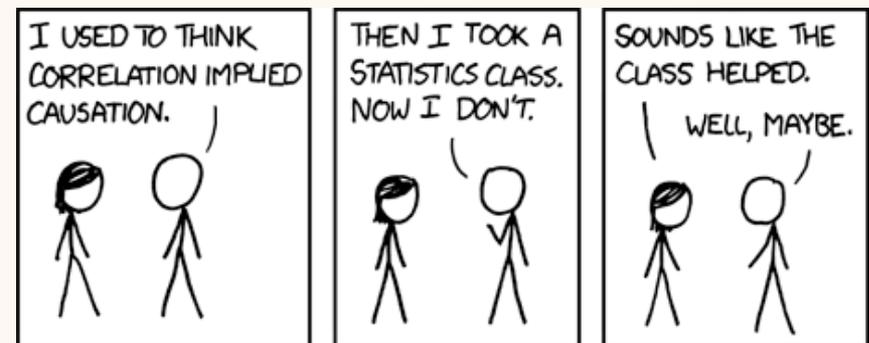
#CAMHScampfire



The Mental Elf

## 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/>



The Association  
for Child and Adolescent  
Mental Health

# CAMHS around the Campfire



*Virtual journal club*

#CAMHScampfire

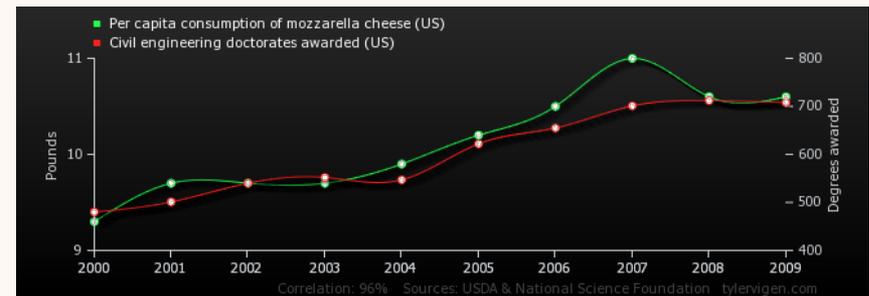


The Mental Elf

## Reality Check No 2

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.



Credit: Tyler Vigen,  
[Spurious Correlations](#)



# CAMHS around the Campfire

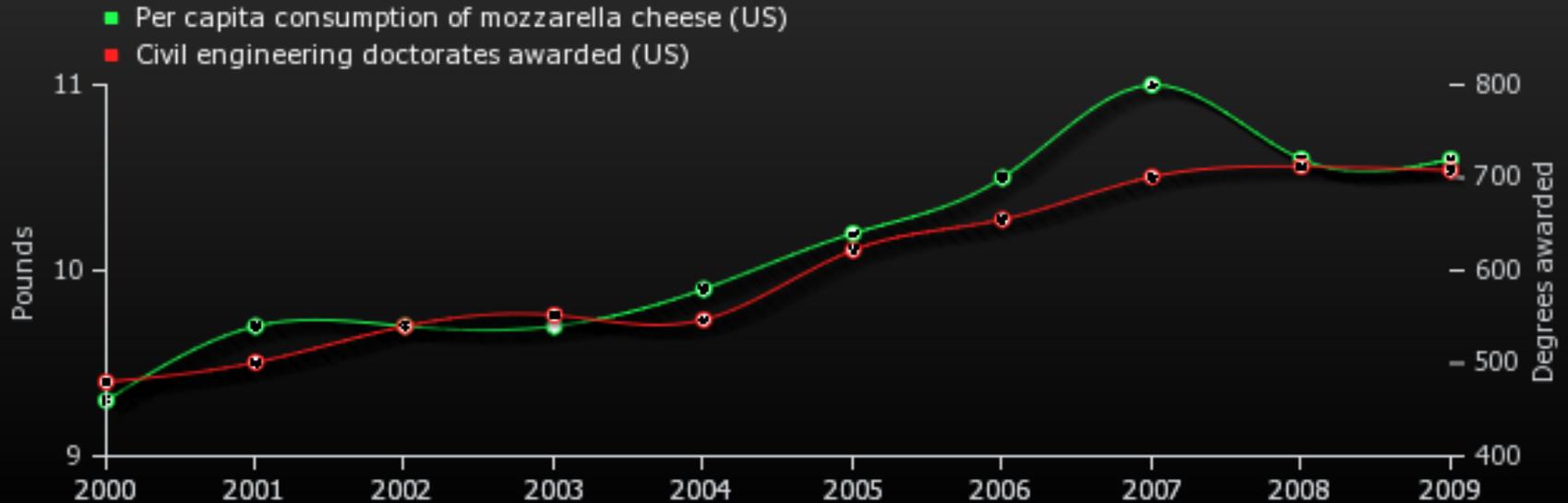


Virtual journal club  
#CAMHScampfire



The Mental Elf

The Association  
for Child and Adolescent  
Mental Health



Correlation: 96% Sources: USDA & National Science Foundation tylervigen.com



The Association  
for Child and Adolescent  
Mental Health

# CAMHS around the Campfire



Virtual journal club  
#CAMHScampfire



The Mental Elf

Check for updates

The Journal of Child  
Psychology and Psychiatry



*Journal of Child Psychology and Psychiatry* \*\*:\* (2021), pp \*\*-\*\*

doi:10.1111/jcpp.13465

## Aetiology of shame and its association with adolescent depression and anxiety: results from a prospective twin and sibling study

Milica Nikolić,<sup>1</sup> Laurie J. Hannigan,<sup>2,3</sup> Georgina Krebs,<sup>4,5</sup>  Abram Sterne,<sup>6</sup>  
Alice M. Gregory,<sup>7</sup> and Thalia C. Eley<sup>4</sup> 

<sup>1</sup>University of Amsterdam, Amsterdam, The Netherlands; <sup>2</sup>Lovisenberg Diaconal Hospital, Oslo, Norway; <sup>3</sup>University of Bristol, Bristol, UK; <sup>4</sup>King's College London, London, UK; <sup>5</sup>National and Specialist OCD and Related Disorders Clinic for Young People, South London and Maudsley NHS Foundation Trust, London, UK; <sup>6</sup>Jerusalem Counseling, Jerusalem, Israel; <sup>7</sup>Goldsmiths, University of London, London, UK

### 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?



# CAMHS around the Campfire



Virtual journal club

#CAMHScampfire



The Mental Elf

The Association for Child and Adolescent Mental Health

## Checklist for aetiology or harm studies

Levine et al (1994)	
<b>Were the participants clearly defined and similar?</b>	
<b>Were the exposures measured consistently?</b>	
<b>Was follow-up long enough and complete enough?</b>	
<b>Do the results satisfy some “diagnostic tests” for causation?</b>	
<ul style="list-style-type: none"> <li>• Is it clear that the exposure preceded the onset of the outcome?</li> </ul>	
<ul style="list-style-type: none"> <li>• Is there a dose-response gradient?</li> </ul>	
<ul style="list-style-type: none"> <li>• Is there positive evidence from a “dechallenge-rechallenge” study?</li> </ul>	
<ul style="list-style-type: none"> <li>• Is the association consistent from study to study?</li> </ul>	
<ul style="list-style-type: none"> <li>• Does the association make biological sense?</li> </ul>	



The Association  
for Child and Adolescent  
Mental Health

# CAMHS around the Campfire



Virtual journal club  
#CAMHScampfire

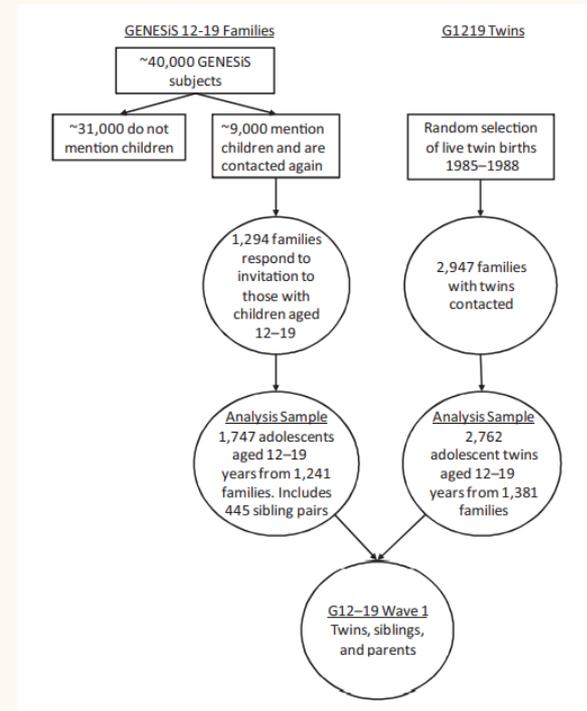


The Mental Elf

## 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 Association  
for Child and Adolescent  
Mental Health

# CAMHS around the Campfire



Virtual journal club  
#CAMHScampfire



The Mental Elf

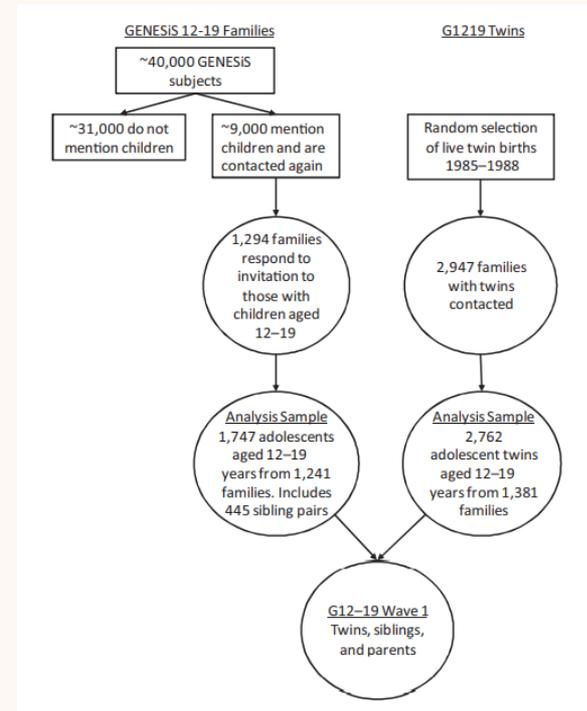
## The research question

### “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.





The Association  
for Child and Adolescent  
Mental Health

# CAMHS around the Campfire



*Virtual journal club*

#CAMHScampfire



The Mental Elf

## 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



# CAMHS around the Campfire



Virtual journal club

#CAMHScampfire



The Mental Elf

The Association for Child and Adolescent Mental Health

## Checklist for aetiology or harm studies

Levine et al (1994)	
Were the participants clearly defined and similar?	Yes
Were the exposures measured consistently?	Yes
Was follow-up long enough and complete enough?	No
Do the results satisfy some “diagnostic tests” for causation?	
• Is it clear that the exposure preceded the onset of the outcome?	Not sure
• Is there a dose-response gradient?	Not sure
• Is there positive evidence from a “dechallenge-rechallenge” study?	Not applicable
• Is the association consistent from study to study?	Yes
• Does the association make biological sense?	Yes



The Association  
for Child and Adolescent  
Mental Health

# CAMHS around the Campfire



*Virtual journal club*

#CAMHScampfire



The Mental Elf

## Find out more

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

For more information about genetics and anxiety, [this blog from King's College London](#) provides an accessible overview.



The Association  
for Child and Adolescent  
Mental Health

# CAMHS around the Campfire



*Virtual journal club*

#CAMHScampfire



The Mental Elf

## 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



The Association  
for Child and Adolescent  
Mental Health

# CAMHS around the Campfire



*Virtual journal club*

#CAMHScampfire



The Mental Elf

## 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.



The Association  
for Child and Adolescent  
Mental Health

# CAMHS around the Campfire



*Virtual journal club*

#CAMHScampfire



The Mental Elf

## 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?