How does socio-economic status influence body weight?
The mediating role of psychological distress and maladaptive eating behaviours

Charlotte A. Hardman, Paul Christiansen, Joanne Dickson & Jade Stewart
Department of Psychological Sciences
University of Liverpool, UK
Charlotte.Hardman@liverpool.ac.uk
@CharlotteHardm3
Socio-economic status (SES) and obesity

• Lower socio-economic status is robustly associated with obesity.

• Areas with higher levels of poverty also have high levels of child obesity.

• Socio-economic inequalities in child weight reversed from 1953-2015.
Why are there SES inequalities in obesity levels?

• Food insecurity – limited or uncertain availability of nutritionally adequate and safe foods.

• Lower-income areas as “Food Deserts” (Larson et al., 2009; Beaulac et al., 2009).

• But individual differences and psychological factors also important but under-studied.
The psychology of eating

- Eating is much more than just responding to a biological need.

- Our mood affects what we eat. Emotions such as feeling stressed, sad or anxious can lead to “eating to cope”.

- Eating to cope is linked with disordered eating and having a higher body weight (Boggiano et al., 2014).

- Obesity often co-occurs with mental health problems, such as depression and anxiety (Luppino et al., 2010).
Socio-economic disadvantage and psychological distress

- There is a well-established link between socio-economic disadvantage and higher levels of stress and mental health problems (Hatch et al., 2011; Timms, 1996).

- Being chronically stressed takes its toll on physical and mental health.

- Stress makes it harder to control our behaviour, to engage in effortful behaviour and to resist temptation (Jones et al., 2013).

- Stress can also lead to unhealthy behaviours such as drinking alcohol or eating unhealthy food as a way of coping (Boggiano et al., 2015; Fanelli Kuczmarski et al., 2017).
Socio-economic disadvantage, psychological distress and obesity

- New theoretical model of obesity (Hemmingsson, 2015):
  Psychological and emotional distress is a fundamental link between socioeconomic disadvantage and weight gain.

- In the current study, we tested these predictions.
Method

Participants and design
• Adults \( (N = 150) \) from a range of socio-economic backgrounds.
• Cross-sectional design.

Measures
• Income and education level as indicators of socio-economic status.
• Psychological distress (Depression, Anxiety and Stress Scale).
• Emotional eating (Dutch Eating Behaviour Questionnaire).
• Resilience (Brief Resilience Scale).
• Height and weight for calculation of body mass index (BMI).

Procedure
• Advertised through Urban Community and Neighbourhood Centres (UCAN’s), situated in deprived areas.
• Online advertisement.
• Paper based copies.
Results

As predicted, there was a significant indirect effect of socio-economic status on BMI via psychological distress and increased emotional eating:

*(Lower) Socio-economic status* → Psychological distress → Emotional eating → *(Higher) Body mass index*

- Psychological distress → Emotional eating: \(0.18 (0.04)\) \(p < 0.01\)
- Emotional eating → *(Higher) Body mass index*: \(0.19 (0.04)\) \(p < 0.01\)

*(Lower) Socio-economic status* → *(Higher) Body mass index*: \(-0.01 (0.06)\) \(p = 0.79\)

Resilience was also entered into the model as a moderator but this did not change the main finding.
Summary of findings

• The relationship between lower socio-economic status and body weight may be partly explained by psychological distress and subsequent emotional eating as a coping strategy.

• Results provide new insight into psychological processes that may underpin the association between lower socio-economic status and health.

• Targeting unhealthy coping behaviours in response to distress may be one way of reducing obesity and improving health in lower-income populations.
Current work on household food insecurity

**AIM.** To develop understanding of the impact of household food insecurity (HHFiS) on mental health, eating behaviour, food choice and obesity.

**Key questions:**
Is HHFiS related to psychological distress (depression, anxiety, stress) and eating as a coping strategy?
Do distress and eating to cope mediate the relationship between HHFiS and poor diet quality/obesity?
How do you feel about your household’s current access to food?

It’s **depressing** because it should be easier to live, basically, and get food.

I’m really **scared** I’m gonna run out of food.

I always **worry**. Every month and I’m worrying now because I know it’s never gonna last.

I just **stress**. And you don’t get too much sleep. Or I **panic** that- if it wasn’t for food banks I don’t know what I would do.

You find it, like, hard to talk as well, like, I haven’t had hardly anything to eat, that’s why I feel a bit, like, not on the ball.
Overall Conclusions and Implications

- Action is needed to increase the availability of healthy nutritious foods in lower income areas. But individual psychology is also important.

- Stress makes it harder to engage in behaviour that is perceived as effortful → need to make healthy eating the easy choice.

- Greater psychological support is needed in lower income communities.

- Upstream changes to social welfare policies are needed to tackle food poverty and improve physical and mental health.
“We need to collectively tackle the places where obesity germs breed – in stressed communities characterised by insecure and erratic employment, inadequate education, stress, depression and a lack of social cohesion. That this requires an enormous shift in public priorities is only to be expected – but the consequences of not acting are far worse.”

https://theconversation.com/its-poverty-not-individual-choice-that-is-driving-extraordinary-obesity-levels-91447