Social support mediates the relationship between extraversion and body mass index in later life

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Personality and the Lifespan

- Change is the only constant in early adulthood\(^1\)
- Consistent after 30\(^2\)?

Extraversion/Introversion

- Eysenck’s extraversion-stability model$^3$: personality understood in terms of 2 basic dimensions;

Extraversion & Health?

- Extraversion & Weight
  - More extraverted individuals heavier\(^4,5,6,7,8\)?
  - Only an association for women?\(^9,10,5\).
- Extraversion & Alcohol
  - More extraverted individuals drink more\(^11,12,13,14,15\)
  - Perhaps extraversion = disinhibition?

Later life – the perfect time to look at the relationship between personality and weight?

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8. Terracciano et al. (2009).
Mechanism of action?

Extraversion

• Motivation to enjoy\textsuperscript{16}
• Extraversion = low basal arousal, sensation seeking = over-eating?\textsuperscript{17} & binge drinking?\textsuperscript{18}
• Via serotonin?\textsuperscript{19,20,21}

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17. Davis et al. (2007).
Mechanism of action?

Social support?

Extraversion

Stress?

Weight
Alcohol intake
Social Support

Social support

Weight\textsuperscript{22}

Alcohol\textsuperscript{23}

Stress

• Overeating, binge drinking as stress behaviours?\textsuperscript{24,25}.
  • Tension reduction hypothesis\textsuperscript{26}.

26. Conger (1951)
Hypotheses

• Extraversion will be related to weight (differentially for men and women?)
  • Mediated by:
    • Social support
    • Stress

• Extraversion will be related to alcohol intake
  • Mediated by:
    • Social support
    • Stress
TRIL Clinic

- Established in 2007 to gain a holistic understanding of the physical, cognitive and social health of older people.
- Between 2007 and 2009, The TRIL Clinic at St James’s Hospital in Dublin assessed 625 older adults aged 65+. In 2010-2011, the Clinic completed a longitudinal follow up.
Data collected:

1. Social Support (LSNS\textsuperscript{27})
2. Alcohol intake: ‘how often do you take an alcoholic drink?’
3. Extraversion (EPQ-R\textsuperscript{3})
4. Body Mass Index (kg and cm); underweight & normal, overweight, obese
5. Perceived Stress (PSS\textsuperscript{28})

Results: Extraversion, BMI & Gender

Does extraversion vary according to weight category and gender?

- Weight category: \( F_{1,529} = 7.71, p<0.01 \),
- Gender: \( F_{1,529} = 1.3, p>0.05 \).
- Interaction: \( F_{1,529} = 3.56, p=0.06 \).

![Graph showing EPQ-R Extraversion Scores by weight category and gender](image)
Does extraversion vary according to alcohol intake and gender?

- Alcohol intake: $[F_{3,556} = 2.89, p<0.05]$.
- Gender: $[F_{1,556} < 1]$.
- Interaction: $[F_{3,556} < 1]$. 
Mediation Analyses

Significant: [weight: $F_{2,566} = 5.18$, $p<0.001$; Adj. $R^2 = 0.0145$]
Alcohol $[F_{2,557} = 4.19$, $p<0.05$; Adj. $R^2 = 0.0113$]

Social support?

Extraversion

Stress?

Weight
Alcohol intake

n.s. $[F_{2,471} = 2.27$, $p>0.05$; Adjusted $R^2 = 0.005$]
Hypotheses & Findings

• Extraversion related to weight **YES**
  (differentially for men and women?) **NO**
  • Mediated by:
    • Social support **YES**
    • Stress **NO**

• Extraversion related to alcohol intake **YES**
  • Mediated by:
    • Social support **YES**
    • Stress **NO**
Conclusions

- Cross-sectional findings suggest that extraversion varies across weight categories, with greater levels found in the heavier categories.
- Social support mediates the relationship between extraversion and weight, and between extraversion and alcohol intake.

*High levels of extraversion may co-vary with poor health behaviours but the impact can be ameliorated with social support.*
**Implications for improving health**

- Personality-contingent effect of social support
- Points of modification in the extraversion – weight – alcohol intake relationships?

**Take home:**

*Health behaviour interventions should incorporate social support components, allowing a level of personalisation according to extraversion levels in the target population.*
References

Thank you!

Questions?