

The Relationship Between Adverse Childhood Experiences, Placement Breakdowns and BMI in an Adolescent Secure Inpatient Population With Developmental Disorders.



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Abstract

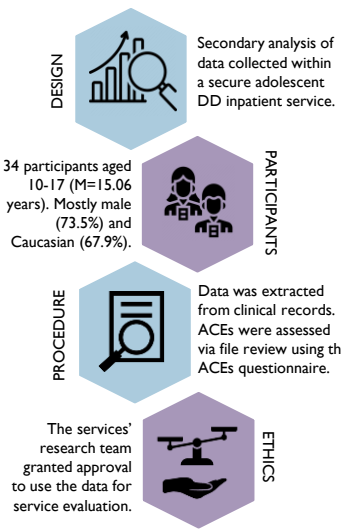
Background & Aims
 ACEs, placement breakdowns and obesity are prevalent in inpatient developmental disorder (DD) services, yet their associations remain unclear. The current study sought to explore the relationship between ACEs, placement breakdowns and obesity in an adolescent inpatient DD sample.

Methods
 Secondary analysis of data for 34 adolescents, aged 10-17, detained to a specialist developmental disorder inpatient service.

Results
 There was a high prevalence of ACEs (M=4.53), placement breakdowns (47.1%) and obesity (41.2%) in the sample. ACEs and placement breakdowns held moderate positive relationships with BMI, and had a dose-response effect. Number of placement breakdowns increased risk for obesity, though it was not independent of ACEs.

Conclusions
 Placement breakdowns and ACEs may act as red flags for obesity in adolescent DD inpatient populations.

Methodology



Q2+Q3. What is the relationship between ACEs / placement breakdowns and BMI?

- Pearson's Correlations**
- Moderate positive correlation between ACEs and BMI ($r(32)=.41, p=.017$) and placement breakdowns and BMI ($r(32)=.49, p=.003$).
 - Strong positive correlation between ACEs and placement breakdowns ($r(32)=.86, p<.001$).

The odds of having a BMI above healthy range were:

4 TIMES GREATER for those with **FOUR+ ACEs**

3.5 TIMES GREATER for those with a **PREVIOUS PLACEMENT BREAKDOWN**

- Regression Analyses**
- Placement breakdowns positively predicted the likelihood of obesity Wald $\chi^2(1)=5.89, p=.02, 95\% CI [2.25-2.11]$.
 - Model 1 (ACEs only) was significant, $F(1,32)=6.31, p=.02$, explaining 17% of the variance in BMI.
 - Model 2 (ACEs + placement breakdowns) was significant, $F(2,31)=5.11, p=.01$, explaining 25% of the variance in BMI. The R^2 change was non-significant, F change $(1,32)=3.42, p=.07$.

Introduction

Obesity and ACEs: A global concern
 One third of UK children are overweight or obese (Thomas et al., 2019), and this figure is set to rise. One factor underlying obesity is adverse childhood experiences (ACEs). 'ACEs' refers to a range of directly experienced adversities (i.e. abuse, neglect) and witnessed household traumas (i.e. domestic violence, parental incarceration).

Developmental disorder inpatients: A population at risk
 One population who remain unrepresented, despite their pre-existing vulnerability to ACEs and obesity, are inpatients with a DD (Mehari et al. 2020). Those residing in inpatient settings are also at risk of institutional trauma, including placement breakdowns (Morris et al., 2020).

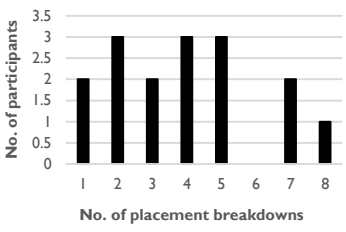
Untangling ACEs
 Placement breakdowns may represent an independent ACE, which may further exacerbate the risk for obesity. Given the high concordance of ACEs and placement breakdowns, their relative contribution to obesity risk remains unclear.

Results

Q1. What is the prevalence of ACEs, placement breakdowns and obesity?

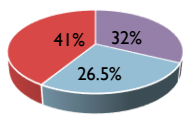
The prevalence of ACEs (M=4.53, range 0-10) was high in the sample. Nearly half of participants had experienced a placement breakdown (47.1%); of these participants, most experienced multiple breakdowns (M=3.94). The distribution of placement breakdowns is illustrated in Figure 1.

Figure 1.
 Frequency of placement breakdowns experienced



As illustrated in Figure 2, the majority of the sample were above a healthy weight. Of the 34 participants, 14 were obese and 9 were overweight.

Figure 2.
 Frequency of participants by BMI category



• Healthy Weight • Overweight • Obese

Discussion

Findings
 In line with existing research (i.e. Wiss & Brewerton, 2020), ACEs were positively associated with BMI and held a dose-response effect.

Number of placement breakdowns also held a dose-response effect on BMI. This novel finding supports the concept that institutional ACEs may be an important factor driving obesity in adolescent DD inpatient populations (Finkelhor et al., 2015).

However, whether placement breakdowns and its impact on BMI is independent of the existing ACEs framework (Felitti et al., 1998) remains unclear; adolescents who have experienced a high number of ACEs also tend to experience a high number of placement breakdowns (Aslamazova et al., 2019).

Implications

- ACEs and placement breakdowns should be considered red flags for obesity risk in this population, to aid in the early identification and prevention of obesity.

Limitations

- An underpowered sample limits the generalisability of the findings beyond the sample.
- The sample was predominantly male, though the current literature supports greater ACE exposure in females (Winstanley et al., 2020). Thus the prevalence and impact of ACEs could be underrepresented.

Future Directions

- Replication is required in a larger, gender-balanced sample.
- Exploration of the mechanisms underpinning the relationship between ACEs, placement breakdowns and BMI is warranted.

Study Aims

The current study sought to understand:

- Q1. What is the prevalence of ACEs, placement breakdowns and obesity?
- Q2. What is the relationship between ACEs and BMI?
- Q3. What is the relationship between placement breakdowns and BMI?

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