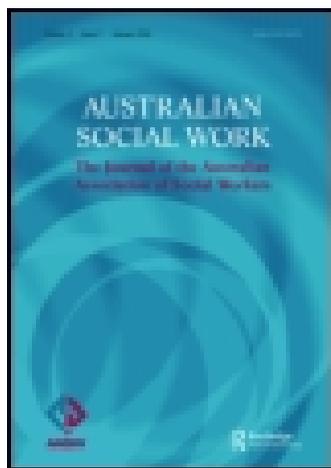


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Rachael Cox^a, Helen Skouteris^a, Erik Hemmingsson^b, Matthew Fuller-Tyszkiewicz^a & Louise L. Hardy^c

^a School of Psychology, Deakin University, Burwood, Victoria, Australia

^b Obesity Center, Karolinska University Hospital Department of Medicine, Karolinska Institutet, Stockholm, Sweden

^c School of Public Health, Prevention Research Collaboration, University of Sydney, New South Wales, Australia

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Problematic Eating and Food-related Behaviours and Excessive Weight Gain: Why Children in Out-of-home Care Are at Risk

Rachael Cox^a, Helen Skouteris^{a*}, Erik Hemmingsson^b, Matthew Fuller-Tyszkiewicz^a, & Louise L. Hardy^c

^aSchool of Psychology, Deakin University, Burwood, Victoria, Australia; ^bObesity Center, Karolinska University Hospital Department of Medicine, Karolinska Institutet, Stockholm, Sweden; ^cSchool of Public Health, Prevention Research Collaboration, University of Sydney, New South Wales, Australia

Abstract

Emerging evidence suggests that abuse and neglect in childhood may play a role in subsequent development of obesity. One population group particularly at risk is children and young people living in out-of-home care (OOHC). Given this population is already a vulnerable group, identifying potential mechanisms by which childhood abuse and neglect increases risk for obesity is essential. A possible explanation is that problematic eating and food-related behaviours (i.e., emotional eating, compulsive eating, overeating, binge eating, stealing or hoarding food) might mediate the association between adverse childhood experiences and obesity. Hence, the overall goal of this paper was to provide a narrative review of eating and food-related difficulties for children in care and their possible association with unhealthy and excessive weight gain. This review revealed a shortage of existing empirical papers and signalled particular need for further examination of the mediating effects of problematic eating.

Keywords: Adolescents; Out-of-home Care; Health Social Work

Despite a focus on prevention and early intervention by child protection authorities, Australian children continue to experience abuse (physical, sexual, or emotional) and neglect. An estimated 37,781 substantiations of abuse and neglect were made across Australia in 2011–12 (7.4 per 1,000 children) (Australian Institute of Health & Welfare [AIHW], 2013). The estimated number of abused and neglected children is also high in other developed nations, including Canada (Public Health Agency of Canada, 2008), the UK (Radford et al., 2011) and the USA (U.S. Department of Health and Human Services, Administration for Children and Families, Administration on Children, Youth and Families, Children's Bureau, 2013), despite government interventions to protect at-risk children. In Australia, substantiations refer to cases where:

It was concluded that there was reasonable cause to believe that the child had been, was being, or was likely to be, abused, neglected or otherwise harmed. Substantiations may also include cases where there is no suitable caregiver, such as children who have been abandoned or whose parents are deceased. (AIHW, 2013, p. 8)

*Correspondence to: Professor Helen Skouteris, School of Psychology, Faculty of Health, Deakin University, 221 Burwood Highway, Burwood, VIC 3125, Australia. Email: helen.skouteris@deakin.edu.au

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Nationally, substantiations are classified into one of four categories (depending on the predominant type of abuse or neglect): physical abuse, sexual abuse, emotional abuse, or neglect (AIHW, 2013).

Some children and young people who have been subject to child protection substantiation are removed from their homes and placed in out-of-home care (AIHW, 2013). Out-of-home care provides alternative housing for those young people who are unable to live with their parents or families (typically due to abuse or neglect) and involves placement with an alternative caregiver(s) on a short- or long-term basis (AIHW, 2013). Internationally, other terms such as “looked after children” are used to describe children and young people who have been removed from their families. For the purpose of this paper, the term out-of-home care (OOHC) will be used. Current research indicates that young people living in OOHC are a high risk group, with increased developmental needs (Department of Families, Housing, Community Services and Indigenous Affairs, 2010). Indeed, trauma and abuse during childhood has been shown to significantly impact an individual’s emotional, behavioural, cognitive, social, and physical health and functioning (Perry, Pollard, Blakley, Baker, & Vigilante, 1995), and there is a growing body of evidence recognising that abuse and neglect during early childhood can be a life course social determinant of health; that is, an individual’s early experiences impact on health in adulthood (Greenfield & Marks, 2009; Shonkoff, Boyce, & McEwen, 2009).

While existing literature has primarily focused on the psychological consequences of childhood abuse or neglect, research examining its impact on physical health is growing. A number of systematic reviews and meta-analyses highlight the long-term impacts of child abuse and neglect on adult morbidity and mortality and, particularly, increased risk of obesity (Gustafson & Sarwer, 2004; Hemmingsson, Johansson, & Reynisdottir, 2014; Irish, Kobayashi, & Delahanty, 2010; Midei & Matthews, 2011; Norman et al., 2012; Paras et al., 2009). Although the evidence is not necessarily consistent overall, the current literature suggests that childhood abuse, regardless of type of abuse, is associated with the development of obesity, and may be characterised by a dose-response relationship (i.e., the severity of abuse was positively associated with obesity risk) (Gustafson & Sarwer, 2004; Hemmingsson et al., 2014; Midei & Matthews, 2011). This finding is further supported by research that suggests there are high rates of overweight and obesity among children and young people living in OOHC (Skouteris et al., 2011). Given there are a number of negative physical and psychological consequences of being overweight or obese, identifying potential mechanisms by which childhood abuse and neglect increases risk for obesity is essential; particularly for children and young people living in OOHC, who are already a vulnerable group. Indeed, understanding how adverse early experiences may lead to unhealthy weight gain in this population will inform the development of effective intervention programs, which can then be translated into child welfare practice.

One possible mechanism linking childhood abuse and subsequent obesity is the presence of problematic eating behaviours. For the purpose of this paper, problematic eating and food-related behaviours refers to difficult or disturbed eating, for example, emotional eating, compulsive eating, overeating, binge eating, and stealing or hoarding food. Although limited, the evidence suggests that problem eating and food-related behaviour are prevalent among young people living in OOHC (Casey, Cook-Cottone, & Beck-Joslyn, 2012). Of particular concern is how these eating or dietary behaviours might influence excessive weight gain (see Figure 1). Research into OOHC and overweight and obesity is limited (Skouteris et al., 2011), hence, the aims of this paper are to provide a

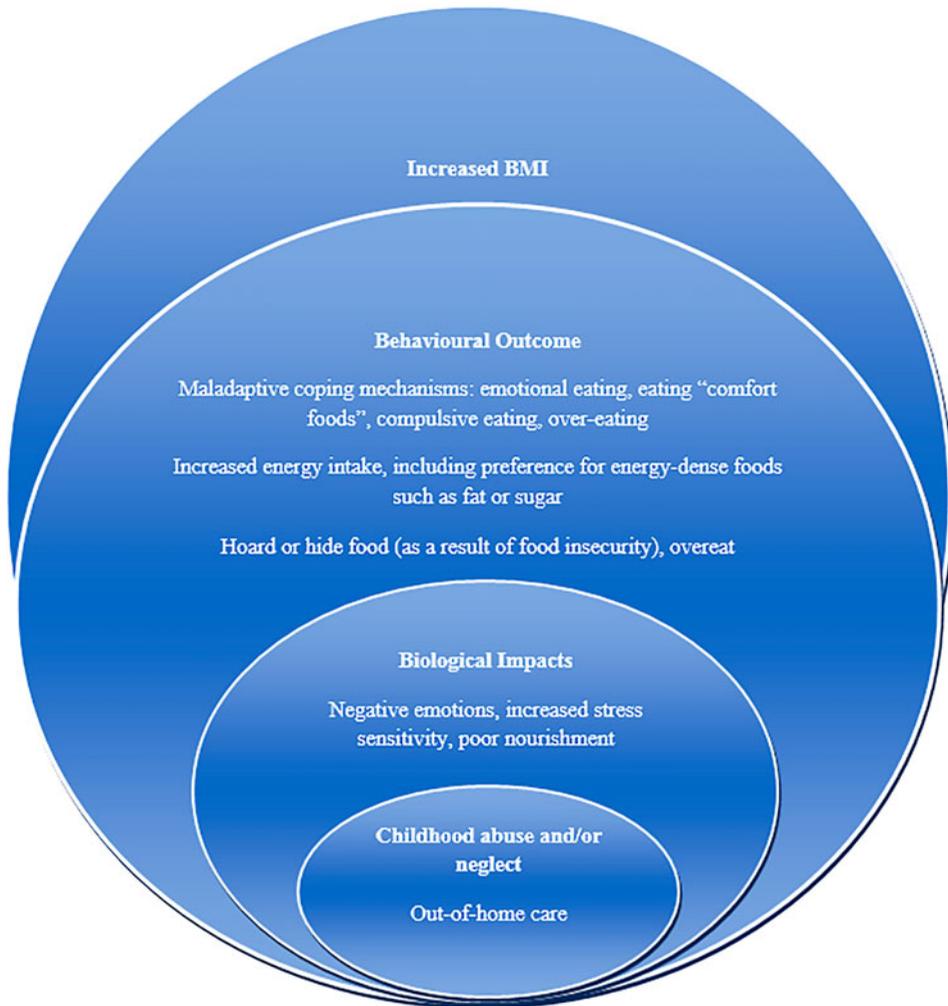


Figure 1 A Conceptual overview of how adverse childhood experiences impacts behaviour, biology, and BMI

narrative review of: (1) eating and food-related difficulties for children in care and their possible association with unhealthy and excessive weight gain, and (2) the suggested developmental mechanisms that might mediate the association between childhood abuse and obesity, specific to problematic eating.

Overview of Problematic Eating and Food-related Behaviours among Children and Young People in OOHC

Studies examining children's eating patterns while living in care are limited. The evidence suggests that problem eating and food-related behaviour (i.e., emotional eating, compulsive eating, overeating, binge eating, and stealing or hoarding food) are prevalent in young people living in OOHC (Casey et al., 2012). One of the studies described by

Casey et al. (2012) in their review was a two-part exploratory study that examined foster parent experiences of behavioural problems in a sample of sexually abused children (Thompson, Authier, & Ruma, 1995). Seventy-seven percent of foster parents ($n = 300$) reported *sometimes* or *frequent* eating problems in the children they cared for, with 23% finding these behaviours *bothersome*. While this finding indicates a high frequency of this behaviour among foster care children, it is important to note that this study did not define eating problems and therefore it is difficult to draw conclusions about the exact behaviours that were considered problematic. Nevertheless, the finding still indicates that foster parents often encounter difficult food related behaviours.

A similar study by DuRousseau, Moquette-Magee, and Disbrow (1991) examined nutritional risk factors among a sample of children residing in foster care. Disordered eating behaviours were found in 8 out of 27 children, including, gorging food to the point of vomiting, stealing and hiding food, self-induced vomiting, and frequent refusal of food (DuRousseau et al., 1991). Casey et al. (2012) further described a study by Demb (1991), who used the term hyperphagia to describe a pattern of behaviour, characterised by an excessive appetite, lack of satiety, and overeating to the point of vomiting or gastric pain. Demb (1991) reviewed the medical records of 200 foster care children and found that during the course of a mental health evaluation, 10 foster mothers reported behaviours that fitted the definition of hyperphagia. It should be acknowledged that children were not referred for evaluation on the basis of problematic eating behaviours, this was found incidentally during the evaluation; therefore, it is possible that the prevalence of hyperphagia is actually higher in this population.

A more recent study reviewed by Casey et al. (2012) investigated patterns of aberrant eating among 347 preadolescent children (6–11 years) residing in foster or kinship care in Australia (Tarren-Sweeney, 2006). Using the Assessment Checklist for Children, Tarren-Sweeney (2006) examined two patterns of problematic eating—food maintenance syndrome and pica-type cluster. Items from the food maintenance scale aimed to identify behaviours such as overeating, hoarding, or stealing food. Pica-type behaviours were assessed to identify behaviours characterised by eating nonfood items or eating from unhealthy sources. Approximately one quarter of the sample scored in the nominal borderline or clinical ranges for one or both domains (food maintenance syndrome or pica-type cluster). This is much higher than current estimates of eating disorders in the general population; it is estimated that 1–4% of adolescents may meet the criteria for anorexia nervosa or bulimia nervosa and a further 5% may meet the criteria for an eating disorder not otherwise specified (Allen, Byrne, Oddy, & Crosby, 2013).

Is Problematic Eating Associated with Unhealthy Weight Gain for Children in OOHC?

Although much more research is needed to determine more specific prevalence rates, exploratory research suggests children in OOHC are at increased risk of a range of problematic eating behaviours. Given high rates of overweight and obesity have also been reported for children in OOHC (Hadfield & Preece, 2008; Kim, Ham, Lee, & Lee, 2009; Schneiderman, Leslie, Arnold-Clark, McDaniel, & Xie, 2011; Schneiderman, Mennen, Negrieff, & Trickett, 2012; Steele & Buchi, 2008), of particular concern is how these eating or dietary behaviours might impact on unhealthy weight gain. Only two studies to date have discussed the implications of their findings in relation to healthy weight management.

Demb (1991) found that 5% of foster children referred for mental health evaluations reported cases of hyperphagia. The children in this study were of healthy weight, which is surprising given that overeating has been found to be associated positively with childhood body mass index (BMI) (van den Berg et al., 2011). However, the cross-sectional nature of this study makes it difficult to predict whether a future consequence of this behaviour would have been increased weight gain. Tarren-Sweeney (2006) also found patterns of problematic eating, without the incidence of overweight or obesity; 75% of children with identified food maintenance problems were reported to be of healthy weight. Interestingly, this study identified a high prevalence of overeating, with a low prevalence of obesity. This finding challenges previous research (van den Berg et al., 2011) which suggested that overeating is associated with obesity and, as the authors suggest, may have important clinical implications; especially, if clinicians are not identifying the presence of problematic eating behaviours, including overeating in normal weight children. However, a significant limitation of this study was that objective measures of children's weight and height were not obtained. The weight status of young people in Tarren-Sweeney's study was instead determined by carer self-report on a single item (overweight) from the Child Behavior Checklist. Children were placed in one of three categories: not obese ($n = 320$); neither obese nor nonobese ($n = 20$) (children were placed in this category if their carer responded *somewhat true* to the overweight item); and obese ($n = 7$) (children were classified obese if their carer responded *very true* to the overweight item). Consequently, it is possible that the identified rates of normal weight, overweight, and obesity were inaccurate. It is also important to note that the low number of overweight children in this sample did not allow for comparison of excessive eating or abnormal eating across obese and nonobese children. Clearly, this is an area that warrants further investigation with objective outcomes measures.

Possible Mechanisms Linking Childhood Abuse and Obesity

A significant gap in the research is establishing whether problematic eating mediates the relationship between childhood abuse and neglect, and overweight and obesity. However there is some emerging evidence that posits a number of potential explanations. One plausible explanation is that people who have faced social adversities may not have adequate strategies to cope with stress or negative emotions and therefore create stress responses that involve poor dietary choices and inactivity (D'Argenio et al., 2009; Shin & Miller, 2012). For example, abused or traumatised children may use food as a coping mechanism, for instance, emotional eating, eating "comfort foods", compulsive eating, or eating more in general (Bentley & Widom, 2009; Boynton-Jarrett, Rosenberg, Palmer, Boggs, & Wise, 2012; D'Argenio et al., 2009; Shin & Miller, 2012). In this case, food may be used to self-soothe and deal with negative emotions to either avoid or help manage stressors. Greenfield and Marks (2009) examined whether self-reported physical or psychological abuse (by primary caregivers) was associated with higher likelihood of being obese in adulthood. Interestingly, they found that participants who reported instances of both physical and psychological abuse (with one type of abuse occurring frequently), were more likely to be obese by adulthood. Further analyses were conducted to determine whether greater use of food in response to stress may mediate this relationship. The findings revealed that using food as a coping mechanism doubled the risk of obesity, suggesting that problematic eating may be one pathway linking early trauma to subsequent obesity.

Another suggestion is that childhood abuse may cause psychobiological disturbances in the regulation of eating behaviour, resulting in added risk for obesity later on in life

(Gunstad et al., 2006; Gustafson & Sarwer, 2004). A handful of studies have investigated physiological response to stressors and how this might affect eating behaviour and subsequent weight gain (Björntorp, 2001; Dallman, 2010; Dallman, Pecoraro, & la Fleur, 2005). Specifically, Björntorp (2001) discussed how exposure to early life stress may be associated with abdominal obesity through neuroendocrine stress reactions. Available evidence suggests that psychosocial stress can impact on food intake regulation by causing an imbalance in the leptin and neuropeptideY (NPY) systems. This imbalance can result in simultaneous activation of our food intake mechanisms and inhibition of satiety mechanisms and not surprisingly has been found to encourage increased energy intake in vulnerable people. Björntorp (2001) also proposed that positive energy intake might also be associated with decreased physical activity, resulting from “closer control of energy balance at higher levels of energy output, and less tight regulation at lower levels of physical activity” (Björntorp, 2001, p. 84). It can be assumed that children and young people have often experienced a number of stressful events prior to entering OOH (New South Wales Department of Community Services, 2007), and therefore this presents another probable mechanism linking abuse and unhealthy weight gain in this population.

Additionally, Dallman (2010) argued that heightened physical or emotional distress can also increase our intake of “comfort foods” (despite not being hungry or having a homeostatic requirement for food). This is because stress produces elevated glucocorticoid levels and insulin secretion which can result in an elevated desire to eat and therefore increased food intake (Björntorp, 2001; Dallman et al., 2005), particularly intake of pleasurable fat and sugar (Dallman, 2010). Hence, people often change their eating behaviours in response to stress, with a tendency to choose foods with increased fat and sugar content. One suggestion is that tasting energy-dense foods such as fat or sugar induces positive emotional responses (Macht, 2008). Socio-ecological models indicate the socio-demographic characteristics of communities influence individuals’ food choices, availability and access (Larson, Story, & Nelson, 2009; Wolfenden, Falkiner, & Bell, 2010). Other research also indicates that food choices are driven primarily by a child’s familiarity with food and secondly by taste, and food preferences appear to be related to exposure (Wood & Harper, 2008), it is plausible to assume that for some young people in care these key drivers may also impact the types of food they consume in response to different emotions.

Perhaps most concerning is the finding that increased appetite in response to stress can result in the development of habitual behaviours. Overtime, our brain forms a memory of this association and therefore starts to link “feeling stressed and feeling better after indulging in comfort foods” (Dallman, 2010, p. 5). This is presumed to result from “comfort foods” diminishing an individual’s emotional response to stress and therefore reinforcing subsequent consumption of those foods. Dallman (2010) outlines two reasons why routine use of food to decrease stress-related feelings can be detrimental: (1) habitual “comfort eating” has been associated with central adiposity and obesity (Dallman et al., 2003, 2005; Tomiyama et al., 2012), and (2) repeatedly using food in response to stress decreases an individual’s capacity to develop and use other coping mechanisms; hence, using “comfort foods” to reduce stress becomes an automatic response (Dallman, 2010). Again, given their histories, it is plausible that this may also mediate the relationship between early abuse and higher BMI for children and young people in OOH.

Furthermore, individuals with a history of abuse and neglect, where food supplies are unpredictable, may be at increased risk of behaviours such as binge eating (Perry, 2001; Rees, Holland, & Pithouse, 2012). Indeed, several studies have found an association

between childhood abuse and disordered eating (binge eating, dieting, and purging) (Allison, Grilo, Masheb, & Stunkard, 2007; Brooke & Mussap, 2013; Burns, Fischer, Jackson, & Harding, 2012; Connors, 2001; de Groot & Rodin, 1999; Johnson, Cohen, Kasen, & Brook, 2002; Treuer, Koperdák, Rózsa, & Füredi, 2005). Similarly to “comfort eating”, it is thought that binge eating is used as a way of initiating self-soothing or diverting one’s attention from negative emotions (Burns et al., 2012). Another hypothesis is that low self-esteem, coupled with physical neglect and poor nourishment triggers binge eating behaviours (Allison et al., 2007). A final explanation offered is that children with severe neglect may hoard or hide food or overeat as a result of food insecurity; this is a common outcome related to being food deprived during early childhood (Perry, 2001). Hence, disordered and other problematic eating behaviours may be another factor which may mediate the relationship between childhood maltreatment and obesity risk for young people in OOHC.

In summary, there are several mechanisms that may link childhood abuse with obesity development for young people residing in OOHC, including chronic stress and concomitant neurotransmitter imbalances, perceived insecurity, “comfort eating” to cope with negative emotions and disordered eating.

Future Directions and Implications for Practice

Our narrative review suggests that children living in OOHC are at increased risk of problematic eating behaviours. Greater attention to young people’s eating behaviours by the people responsible for their care is, therefore, not only warranted but needed urgently. Indeed, carers are in a unique position to help identify and address any eating concerns that may arise during a young person’s placement in care or refer the young person to health professionals, where necessary. Furthermore, in order to promote optimal wellbeing for children living in OOHC, there is little doubt that future research needs to have a stronger focus on identifying whether patterns of aberrant eating contribute to weight gain in this population. This is especially important given overweight and obesity has increasingly been identified as significant problems for young people in care. It is surprising that only two studies have examined this association and although neither study found a positive association, each had limitations which may have impacted their findings.

It is clear that research considering such effects is still in its infancy and therefore, further examination of the mediating effects of problematic eating is required. Future research should focus on identifying whether patterns of problematic or aberrant eating can explain the relationship between childhood abuse and neglect and subsequent weight gain for children and young people in OOHC. It is important that future research: (1) obtains objective measurements of height and weight to determine child BMI, and (2) considers how patterns of eating behaviour are related to prevalence of overweight or obesity. It is also vital that future research focuses on identifying these behaviours across different OOHC placement types, that is, kinship care, foster care, and residential care. The findings of research evaluating these factors can then be used to better inform intervention strategies designed to address problematic eating and prevent excessive weight gain among young people living in OOHC. Immediate knowledge gaps that could also be considered by the sector include, a review of current OOHC policies on nutrition and physical activity and identifying barriers that may influence policy uptake by carers.

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