

ADVERSE CHILDHOOD EXPERIENCES MIRRORED IN BODY APPRECIATION AND INTUITIVE EATING IN ADOLESCENTS AND YOUNG ADULTS

A.A. Ivanoff

Anamaria Alexandra IVANOFF

West University of Timișoara, Romania

Abstract: We investigated the correlates of adverse childhood experiences in young people, through a correlational, cross-sectional, comparative design. As expected, the more young people have experienced abuse early in their life, the less they report scores at self-esteem, intuitive eating and body appreciation. In return, we did not find an association between body mass index and self-reported abuse. We suggest that ideals of an athletic, thin, attractive body outweigh the association between body mass index and adverse childhood experiences in young people. Otherwise, these body ideals may not have this influence with age, the association becoming significant in adulthood.

Keywords: adverse childhood experiences; body appreciation; body mass index; adolescents; young adults

Introduction

The American organizations Kaiser Permanente and Centers for Disease Control and Prevention observed a high frequency of sexual abuse in obese people, ascertainment from which ACE Study has been incurred (Boullier & Blair, 2018). In other words, the focus of the „battered child syndrome” (Kempe, Silverman, Steele, Droegemueller, & Silver, 1962) shifted towards the „battered adult syndrome”, researchers intending to discover how adults manage and treat their wounds from a traumatic childhood (Foege, 1998).

Therefore, in 1998, Felitti and colab. captured the effects of adverse childhood experiences on adults’ health: the more they have experienced adverse childhood experiences, the more they have reported health problems later in their lives, for example obesity (Felitti et al., 1998).

Overweight can be traced back to infancy: studies underlie the connection between childhood abuse and obesity in adolescents (Heerman et al., 2016) and especially in adults (Bentley & Widom, 2009; Williamson, Thompson, Anda,

Dietz, & Felitti, 2002). In a study conducted on adolescents (10-17 years old), Heerman et al. (2016) found that participants who have experienced two or more adverse experiences in their family have 80% chances to be obese compared with those who did not live that kind of experience. Furthermore, the obesity of 8% of the adults with a body mass index ≥ 30 and 17% of those with a body mass index ≥ 40 is assigned to childhood abuse, with the mention that frequent verbal and physical abuse are associated with an increase in weight and in the risk of obesity in the middle age (Williamson et al., 2002).

The results obtained in adolescents and adults are not always replicated in young people. For example, in a longitudinal study conducted by Lissau and Sørensen (1994), it was observed that dirty, neglected kids exhibited a higher risk to be obese compared with the clean, well-groomed ones. The authors suggest that neglect can take shape in altered behaviours, for instance compulsive eating, physical-inactivity (Lissau & Sørensen, 1994).

Conversely, Fuemmeler, Dedert, McClernon and Beckham (2009) have come to the conclusion that only young adult men, with a history of sexual abuse, exhibit an elevated risk for overweight and obesity, conclusion not applicable to women. The effects of childhood abuse on excessive weight in women may be contrabanced by the constraints of society, very powerful in youth, to be thin (Fuemmeler et al., 2009). In the support of this finding come the results of the meta-analytic study conducted by Danese and Tan (2014), according to which the association between adverse childhood experiences and obesity is significant only in adult population.

Adverse childhood experiences impact social, emotional and cognitive development, facilitating therefore behaviours which put in risk the health and well-being of the person (Felitti et al., 1998). Thus, ACE are associated with a poor physic (Bellis et al., 2014) and mental health (Edwards, Holden, Felitti, & Anda, 2003; Gavrilă, 2008), with a low self-esteem (Bolger, Patterson, & Kupersmidt, 1998; Mullen, Martin, Anderson, Romans, & Herbison, 1996) and problems with the body image (Cash & Smolak, 2011). Smoking, alcohol abuse, drug abuse and overating are possible coping mechanisms underlying this association (Felitti et al., 1998).

Compulsive eating can constitute, in people abused sexually in their childhood, an attempt to manage dysphoria and these coping mechanisms can be responsible for maintaing obesity in adults (Williamson et al., 2002). Moreover, emotional abuse can play a role in the etiology and the maintenance of the eating psychopathology (Kent & Waller, 2000). For example, 17% of bulimic women in United States are assigned to sexual abuse (Wonderlich, Wilsnack, Wilsnack, & Harris, 1996). Furthermore, in a meta-analytic study conducted by Caslini et al. (2016), bulimia nervosa and binge eating disorder are associated with physical, sexual and emotional abuse in infancy, while

anorexia nervosa is associated only to physical abuse (Caslini et al., 2016).

Equally, in a recent meta-analysis, Pignatelli, Wampers, Loredio, Biondi and Vanderlinden (2017) have shown that half of the individuals with eating disorder have been emotionally (53,3%) and/or physically (45,4%) neglected, prevalences much higher compared to the general population, where emotional neglect has a prevalence of 18,4%, and physical neglect of 16,3% (Stoltenborgh, Bakermans-Kranenburg, & van IJzendoorn, 2013).

However, besides the pronounced interest on pathology, a particular interest is aroused by the healthy eating patterns, like the natural tendency of the individuals to let themselves to be guided by their physiological hunger and satiety cues in determining what, when and how much to eat (Tylka, 2006; Tylka & Kroon van Diest, 2013). Therefore, in a study carried out in 2013 on 137 female students, Stapleton and Nikalje obtained a surprising result: the practices of intuitive eating, when female students take into account their body signals, are not affected by their body weight and predict, in fact, body appreciation. Thus, the females who are not internalizing the ideals of society to have a particular external appearance, do not feel the pressure to be thin, succeeding to appreciate their body, despite their body shape and size (Stapleton & Nikalje, 2013).

Body appreciation is a dimension of a complex, multidimensional construct, like body image (Avalos, Tylka, & Wood-Barcalow, 2005) and it refers to the gratitude, respect, favourable opinions of an individual towards his/her own body (Tylka & Wood-Barcalow, 2015). Body appreciation is positively associated with self-esteem and intuitive eating and negatively associated with eating disorders (Avalos et al., 2005). Simultaneously, the shame and the dissatisfaction against the body fulfil the function of mediators in the correlation between childhood sexual abuse and eating disorders (Cash & Smolak, 2011). The girls who were sexually abused feel disgusted with their body and can engage in behaviours as a result of which their organism suffer, for instance starvation and self-harming (Cash & Smolak, 2011, p. 121). Therefore, we can observe the close link between intuitive eating and body appreciation, but also the impact of the adverse childhood experiences on the two.

Adverse childhood experiences are also accompanied by a lower self-esteem (Bolger et al., 1998; Mullen et al., 1996). Thereby, comparatively to women who never lived an adverse childhood experience, women who were abused in infancy, besides a lower self-esteem, they report lower scores to scales which measure depression, anxiety, somatization (McCauley et al., 1997). In this manner, McCauley et al. (1997) observed that women who reported six or more symptoms, presented a four times higher probability to have been abused comparatively to the ones disturbed by no more than two

symptoms such as eating binges, self-induced vomiting, loss of appetite, etc.

The prevalence of abuse varies from country to country or from continent to continent (Barth, Bermetz, Heim, Trelle, & Tonia, 2013; Stoltenborgh, 2012; Stoltenborgh, Alink, & Ijzendoorn, 2014; Gavrilă-Ardelean & Horvath, 2009) with the specification that a higher prevalence is expected in countries less developed (Almuneef, Qayad, Aleissa, & Albuhairan, 2014; Kazeem, 2015). Starting from this body of research, we conducted a study in Roumania for the better understanding of the connections between body mass index and adverse childhood experiences in adolescents and young adults.

Methodology

Participants and procedure

For this study, a number of 275 subjects participated (n=275), among which 226 are women and 49 are men, between the ages of 18 and 55 (M=22,30; SD=5,305). Data collection was mixed: 109 subjects (40%) completed the online version (google forms) and 166 subjects (60%) completed the paper-pen version. The questionnaires were presented in the same order, irrespective of the completed version. Regarding to the educational level, 206 (75,5%) have graduated highschool, 55 (20,1%) university and only 10 participants have postgraduate studies (3,7%) with the mention that 2 participants refused to answer. 171 individuals are in a relationship for minimum 6 months (62%).

223 participants are students at the West University of Timișoara, Roumania (n=223), the vast majority of them are studying Psychology. 47 subjects are underweight (17%), 167 have a normal weight (61%), 44 are overweight (16%) and 17 are obese (6%).

Instruments

Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1965; traduced in roumanian: Schmitt & Allik, 2005) measures the positive or negative attitude of the person toward himself/herself and has 10 items, displayed on a 4-point scale (1= Strongly Disagree, 4= Strongly Agree). The total score was obtained through the sum of the 10 answers (a higher score highlights a higher self-esteem). In this study we obtained a good coefficient of internal consistency ($\alpha=.89$).

Intuitive Eating Scale (IES-2; Tylka & Kroon van Diest, 2013) measures the tendency of people to rely on their internal hunger and satiety cues in determining of what, when and how much to eat (Tylka, 2006). The instrument contains four subscales: Unconditional Permission to Eat, Eating for Physical Rather Than Emotional Reasons, Reliance on Hunger and Satiety Cues, Body-Food Choice Congruence. In this study we obtained the following values of the

coefficient of internal consistency: IES-2 ($\alpha = .87$), UPE ($\alpha = .77$), EPR ($\alpha = .90$), RHSC ($\alpha = .91$), B-FCC ($\alpha = .83$).

Body Appreciation Scale (BAS-2; Tylka & Wood-Barcalow, 2015; translated in Romanian by Swami et al., 2017) measures the individuals' acceptance of their own body, the deference and favourable attitudes towards the body (Avalos et al., 2005; Tylka & Wood-Barcalow, 2015). The scale has 10 items, displayed on a 5-point scale (1 = Never, 5 = Always). The final score was obtained through the sum of the answers given to the ten items and the resulted sum was divided to ten. In this study we obtained an excellent coefficient of internal consistency ($\alpha = .93$).

Adverse Childhood Experiences International Questionnaire (ACE-IQ; World Health Organization, 2011) measures childhood abuse. This instrument has 13 subscales: physical abuse; emotional abuse; contact sexual abuse; alcohol and/or drug abuser in the household; incarcerated household member; someone chronically depressed, mentally ill, institutionalized or suicidal; household member treated violently; one or no parents, parental separation or divorce; emotional neglect; physical neglect; bullying; community violence; collective violence. The translation in Romanian was undertaken with the support of a student specialized in the English-Spanish field, back-translation. In this study we obtained the following values of the coefficient of internal consistency: ACE-IQ ($\alpha = .87$), A (abuse; $\alpha = .64$), V (violence; $\alpha = .78$), F (family; $\alpha = .53$), P (parents; $\alpha = .69$).

Results

The distribution of the data was checked before running the statistic analysis, skewness values indicating an asymmetric distribution. In consequence, we ruled nonparametric Spearman coefficient of correlation and Mann-Whitney U Test. Spearman's correlation values are shown in Table 1.

H1. *Adverse Childhood Experiences are not associated with body mass index.*

We do not find a link between self-reported traumatic events and body mass index, based on the self-reported weight and height ($\rho_{(247)} = .05$, $p > .05$).

Surprisingly, after we have organized the output depending on the category of weight, we obtained a positive, weak in intensity and statistically significant link between adverse childhood experiences and body mass index in underweight individuals ($\rho_{(44)} = .33$, $p < .05$). The coefficient of correlation remained statistically insignificant in normal weight, overweight and obese individuals.

H2. *There are no differences between normal weight and overweight individuals in respect of the total number of self-reported adverse childhood experiences.*

When applying Mann-Whitney U Test we did not obtain statistically

significant differences between normal weight individuals and the overweight ones in respect of the total number of self-reported adverse childhood experiences ($U = 3510,5$, $p > .05$). Similar to the study conducted by Fummeler et al. (2009), we have excluded from this comparison the underweight individuals, and the overweight and obese individuals were assigned to the same category (overweight).

Nevertheless, normal weight individuals have a higher self-esteem when compared to overweight individuals ($U = 3857$, $p = .01$), they respect their body to a greater extent ($U = 2920$, $p < .01$) and they eat accordingly to their body needs ($U = 3743$, $p < .01$).

H3. *There is a negative link between intuitive eating and adverse childhood experiences.*

We obtained a negative, statistically significant link and very weak in intensity between intuitive eating and adverse childhood experiences ($\rho_{(247)} = -.17$, $p < .01$). Thus, the more the individual experiences adverse events in infancy, the less will eat accordingly to his/her body needs.

As we expected, we obtained a statistically significant, negative link and very weak in intensity between the score achieved at the subscale RHSC and adverse childhood experiences ($\rho_{(249)} = -.16$, $p < .01$), along with a negative and statistically significant association, also very weak in intensity between adverse childhood experiences and the score achieved at the subscale EPR ($\rho_{(249)} = -.16$, $p < .01$).

$P < .05$ indicates a tiny probability that these associations due to hazard. Nonetheless, the magnitude of these links is very weak.

H4. *Between body appreciation and adverse childhood experiences there is a negative link.*

We obtained a negative, statistically significant and very weak in intensity between body appreciation and adverse childhood experiences ($\rho_{(246)} = -.18$, $p < .01$). Therefore, the more the individual is exposed to abuse early in his/her life, the less he/she appreciates and respects his/her own body. Again, the magnitude of this link is very weak.

H5. *Self-esteem is negatively linked to adverse childhood experiences.*

We obtained a negative, statistically significant link and very weak in intensity between self-esteem and adverse childhood experiences ($\rho_{(244)} = -.16$, $p < .01$)

Hence, the more the individual dwells traumatic events, the less tends to be his/her self-esteem. This link very weak in intensity implies precautions in

interpretation.

Table1. Correlations between the studied variables.

Instrument	1	2	3	4	5	6	7	8	9	10
1. RSES	.89	.20**	.26**	.30**	.21**	.37**	.66**	-.16**	-.14**	-.16**
2. IES2 (UPE)	.20**	.77	.16**	.29**	-.17**	.52**	.18**	-.01	-.29**	-.03
3. IES2 (EPR)	.26**	.16**	.90	.46**	.19**	.80**	.28**	-.16**	-.17**	-.19**
4. IES2 (RHSC)	.30**	.29**	.46**	.91	.33**	.78**	.46**	-.16**	-.29**	-.17**
5. IES2 (B-FCC)	.21**	-.17**	.19**	.33**	.83	.31**	.37**	-.02	-.15**	-.07
6. IES2	.37**	.52**	.80**	.78**	.31**	.87	.46**	-.17**	-.34**	-.20**
7. BAS2	.66**	.18**	.28**	.46**	.37**	.46**	.93	-.18**	-.30**	-.21**
8. ACE (Total)	-.16**	-.01	-	-	-.02	-	-	.87	.05	.88**
9. BMI	-.14**	-.29**	-	-	-.15**	-	-	.05	-	.07
10. ACE 0-4	-.16**	-.03	-.17**	-.29**	-.07	-.34**	-.30**	.88**	.07	-

Note: RSES= Rosenberg Self-Esteem Scale; IES2= Intuitive Eating Scale, addressing in all four subscales; BAS2= Body Appreciation Scale; ACE (Total)= The total number of adverse childhood experiences; BMI= Body mass index; ACE 0-4= Relating to the classification of the number of self-reported adverse childhood experiences (from 0- no adverse childhood experiences up to 4- four or more self-reported adverse childhood experiences).

The values of Cronbach's alpha are displayed on the main diagonal.

* $p < .05$, ** $p < .01$.

Discussion

The primary focus has been upon adults in matter of health problems encountered by the adults abused in their infancy (Dube et al., 2003; Edwards et al., 2003; Felitti et al., 1998). Simultaneously, the overwhelming tendency of researchers to focus upon pathological issues was counterbalanced by the construction of scales which measure healthy, positive dimensions of constructs, like body image or eating (Tylka, 2006; Tylka & Kroon Van Diest, 2013; Tylka & Wood-Barcalow, 2015). Hence, we wanted to include young participants in this study, to analyze the connections between adverse childhood experiences and self-esteem, favourable attitudes towards the body, alongside with eating patterns that can embrace the body needs.

In the literature are advanced explanations according to which abused individuals in their infancy could adjust their emotions through compulsive eating (Lissau & Sofensen, 1994; Felitti, apud Williamson et al., 2002). Intuitive Eating Scale measures, through two subscales (RHSC and EPR), exactly the individuals' tendency to eat accordingly to their emotions, for instance stress, loneliness, boredom (Tylka & Kroon van Diest, 2013). Therefore, we expected adverse childhood experiences to correlate to the two subscales, RHSC (Reliance on Hunger and Satiety Cues) și EPR (Eating for Physical Rather Than Emotional Reasons).

On the other hand, there are some European countries where the necessity of education on nutrition and on the modalities to maintain a healthy eating behaviour was understood and it is taken seriously (Vintilă, Marklinder, Nydahl, Istrat, & Kuglis, 2009). Roumania is still undergoing the process of transition to nutrition. People use diets which contain foods rich in carbohydrates and saturated fat. These eating habits also contribute to the rise in obesity (Swami et al., 2017).

Conclusions

Even if our hypotheses were confirmed, the magnitude of these links is small and very weak in intensity. The study of potential mediators and moderators is necessary for the identification of particular contexts in which adverse childhood experiences are associated with body weight (Bennett et al., 2010). For instance, among the studied moderators or mediators are mentioned interpersonal relationships (Bolger et al., 1998), self-esteem, depression (Danese & Tan, 2014; Giletta, Scholte, Engels, & Larsen, 2010). Furthermore, the association between the two variables appears to be significant only in adults (Danese & Tan, 2014).

It is possible that for young individuals the ideals of an athletic, attractive body to counterbalance the association between weight and adverse childhood experiences (Fuemmeler et al., 2009). In the same time, with age, these body ideals may not have the same influence, the association reaching statistical significance in adulthood.

Consistent with our hypothesis, a larger number of self-reported adverse childhood experiences are linked to a lower self-perceived value, to a slight deficiency to eat depending on the body needs, along with a lower respect towards the body. The obtained results are consistent with the existent empirical support: studies have pointed out, in abused individuals, the existence of a lower self-esteem (Bolger et al., 1998; McCauley et al., 1997; Mullen et al., 1996), a higher frequency of eating disorders (Caslini et al., 2016; Pignatelli et al., 2017; Williamson et al., 2002), along with a profound impairment of the self image (Cash & Smolak, 2011). The more young individuals have experienced more adverse childhood situations, the more they eat according to their emotions and the less they base on internal hunger and/or satiety cues, appreciating their body to a smaller extent, which can predispose them to accumulate adiposity (Tylka & Kroon van Diest, 2013).

In conclusion, the theme of childhood abuse and the long term-effects is a fertile field, for both knowledge and relieving the suffering. Simple correlations may be shaped by diverse moderators, such as friendly relations that abused individuals can tie across the years, or the capacity to manage their own emotionality. Successful preventions or interventions among 7 abused

children may save one child from becoming obese in adulthood (Danese & Tan, 2014).

Limits and future directions

This study has many limits, therefore the obtained results require prudence in interpretation. Firstly, the non-experimental design does not allow cause-effect conclusions. Afterwards, the cross-sectional, correlational study allows us to shape conclusions in accordance to the associations between variables (without knowing which variable influences the other) at some point (unable to follow the dynamic of these interactions as we can in a longitudinal study).

Hereinafter, the weight and height of the participants was not objectively measured by professionals, the values were self-reported, fact which can distort the results (Bentley & Widom, 2009). Nevertheless, Danese and Tan have discovered in their meta-analysis conducted in 2014 that the link between abuse and obesity exists, not matter if the weight of the participants was objectively measured or self-reported.

Otherwise, the study depended on the individuals' capacity to remind childhood events. In the same time, the association between adverse childhood experiences and obesity remains statistically significant regardless of the questioning: retrospective or prospective (Danese & Tan, 2014).

Another limit of the study is represented by the small number of male participants, previous studies pointing out differences between men and women with regard to the frequency of abuse and their impact (Danese & Tan, 2014; Edwards et al., 2003; Fuemmeler et al., 2009). Thus, it can be projected studies which can overcome these limits.

As an implication of this study, the obtained results can be used in the establishment of informational programmes that emphasise the importance of adverse childhood experiences in the development of the child (Fond-Harmant & Gavrilă-Ardelean, 2016). In order to be effective, these programs should make use of a professional, but accessible language, being a well-known fact that even if this language gives the impression of authority and prestige, it can be sometimes a barrier between professionals and beneficiaries (Goian, 2010).

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