The relation between Adverse Childhood Experiences (ACEs) and resilience: Differences in gender and home placement?

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Abstract

Introduction: Adverse Childhood Experiences (ACEs) negatively impact a child's resilience. The aim of this study was to examine whether the relationship between ACEs and resilience was moderated by gender and out-of-home placement. This pilot study concerns a clinical population of children in care at Koraal, a treatment center for youth with (mild) intellectual disorders, behavior-, and/or psychiatric disorders. When a negative relation is found, the results may contribute to further development of treatment focused on Trauma-Informed Care. **Method:** A survey and case file study of children aged 5 to 25 years (N = 32) was conducted, for who the number of experienced ACEs and resilience were determined. The data were analyzed through multiple regression analysis. **Results:** No significant moderation was found for gender or out-of-home placement in the relationship between ACEs and resilience. Actually, the relationship between ACEs and resilience was found to be insignificant. However, a significant gender difference was found in the mean number of ACEs, with girls having experienced more ACEs than boys. **Discussion:** This study shows that boys and girls in clinical groups seem to differ in the number of ACEs they experienced. No relationship with resilience was found, this may be the result of low power (data were collected during COVID-19). It is also possible that the complexity and impact of out-of-home placement could explain the lack of a significant effect. Overall, these results highlight the importance for further research into different factors that may contribute to a child's resilience after experiencing ACEs.

The relation between Adverse Childhood Experiences (ACEs) and resilience: Differences in gender and home placement?

Negative or traumatic events while growing up are called Adverse Childhood Experiences (ACEs; Scully et al., 2020). These events were identified as growing up in a household with family members who were mentally ill, substance abusers, or who were involved in the criminal justice system, but also events as being exposed to divorce, death or violence and child maltreatment such as physical, sexual and/or emotional abuse and neglect (Bellis et al., 2013; Felitti, 1998). Studies of Edwards et al. (2003), Merrick et al. (2020) and Wade et al. (2014) found that ACEs have a negative impact on children's further development, as children exposed to at least one ACE were significantly more likely to experience additional ACEs and more negative health outcomes, such as internalizing or externalizing problems (Clarkson Freeman, 2014; Piché et al. (2011). Other studies found that ACEs were predictors for impaired mental health as indicated by disorders such as anxiety, depression, substance abuse and psychotic and personality disorders (Scully et al. 2020). Furthermore, results from a study by Schalinski et al. (2016) on adults supported the assumption that adversity in childhood could lead to trauma symptoms or, in its most extreme form, to post-traumatic stress disorder (PTSD).

Resilience. The ability to successfully adapt to one's situation despite having experienced challenging or threatening adversities is defined as resilience (Zolkoski & Bullock, 2012). According to Garmezy et al. (1993) resilience is built on three factors. First, they stated that children with a high intelligence and ego-resiliency have a better capacity to adapt to a constantly changing environment (Block & Kremen, 1996; Wolff, 1995). Second, resilience is influenced by the support a child receives from its family (i.e., children who are resilient to stress have parents who give more support) (Gribbe et al., 1993). Third, a social environment in which the child is rewarded according to its competencies is indispensable for the development of resilience (Werner, 1989a). Later, studies found that a child's resilience is not a fixed characteristic but can change over time (Afifi & MacMillan, 2011; Bellis et al., 2018) as personal and social factors can help children cope with adversity and strengthen resilience (Cicchetti & Rogosch, 1997).

Relation ACEs and resilience

Multiple studies confirmed that both clinical and non-clinical children who have experienced more ACEs were less resilient than children who have experienced less ACEs. For instance, Bethell et al. (2014) conducted a longitudinal study (n = 95.000; aged 0-17 years) in non-clinical children and found that children who had experienced one or more ACEs were less

resilient than those with no ACEs. In addition, research of Goldenson et al. (2021) found that clinical children (n = 40; aged 12-17) who had experienced four or more ACEs were less resilient than children with less ACEs. There has also been research done on the positive relationship between high resilience and better coping with ACEs themselves, but this relationship will not be considered in this study.

Gender differences

A large body of literature in non-clinical groups confirms that boys and girls differ in the number and sort of ACEs, but possibly also in resilience, and in the relation between ACEs and resilience. However, less is known about whether this is also the case in clinical groups of children.

ACEs. For adults, it is known that women are more likely to experience sexual assaults and abuse, while men are more likely to experience accidents, death and injuries, or physical assaults (Tolin & Foa, 2006). Research of Baglivio et al. (2015) confirmed this for adolescents as they studied the prevalence of ACEs for justice-involved youth living in child-welfare institutions (n = 342; aged 12-18 years) and found that girls reported more frequent exposure to sexual assault and interpersonal victimization, whereas boys reported to witness more violence. Their study stated that girls had higher rates of exposure to all sorts of ACEs.

Resilience. Research of Collin-Vézina et al. (2011) studied the trauma experiences and resilience of Canadian youth in residential care facilities (n = 53; aged 14-17 years) and found no significant gender differences in resilience. On the other hand, Research of Wei et al. (2021), who studied gender differences in the effects of different types of childhood traumas and resilience on depressive symptoms among Chinese non-clinical adolescents (n = 6510; aged 10-17 years), found that the interaction effect of resilience with emotional abuse on depressive symptoms was stronger for girls compared to boys. In addition, research of Andrews et al. (2003), who studied gender differences in social support with victims of violent crimes (n = 157), has shown a stronger effect of negative support related to traumatization for women than men. As previously described, the absence of support after experiencing a traumatic event, can be considered as an indicator of lower resilience and therefore it is possible that girls are especially vulnerable for low resilience compared to boys.

Relation between ACEs and resilience. No study has included gender as moderator in the relation between ACEs and resilience before. However, existing literature does show indications that the associations between ACEs and other health outcomes may differ by gender.

A study of Telman et al. (2016) examined the impact of interparental violence, child abuse and neglect and stressful events and the moderating role of family function on children's PTSD symptoms. Results showed that girls (n = 56; aged 8-12 years) had higher rates of PTSD symptoms after experiencing ACEs than boys (n = 64) (i.e., a stronger positive relation between ACEs and PTSD symptoms for girls). In addition, women were found to be twice as likely to develop PTSD after a traumatic experience and on average suffered from post-traumatic symptoms three years longer than men (Breslau et al., 1997; Breslau & Anthony, 2007). Thus, it is possible that the assumed *negative* relation between ACEs and *resilience* is also stronger for girls than for boys. On the contrary, reserach of Schilling et al. (2007) found more negative outcomes for boys after experiencing ACEs than girls (n = 1093; aged 16-21 years) (i.e., a stronger positive relation between ACEs and antisocial behavior and drug use for boys). However, their study included a non-clinical sample which is not in line with current research.

Overall, there seem several indications that there might be gender differences in the relation between ACEs and resilience. Based on the findings of Telman et al. (2016) as their study is in line with current study's sample, it is hypothesized that the negative relation between ACEs and resilience is stronger for girls than boys.

Differences in home placement

It is also possible that whether a child is living at home or placed out-of-home is a factor in these concepts and their association. Out-of-home care is intended for children where are strong signs or very severe suspicions of an unsafe home situation or risks of neglect or maltreatment, when supervision by the juvenile court did not provide sufficient (van der Linden et al., 2009). Below, findings concerning differences between children at home and placed out-of-home are described for ACEs, resilience and the relation between ACEs and resilience.

ACEs. Out-of-home placed children could be at increased risk for mental disorders caused by untreated issues after experiencing trauma's while living at home (Pecora et al., 2006). For instance, studies of Hall et al. (2018) and DeGue and Spaz Widom (2009) showed that out-of-home placements were associated with a greater predicted risk of onset of sexually abusive behavior compared to juveniles living at home. Research by Stambaugh et al. (2014) indicated that children living in out-of-home care experienced more ACEs and had worse health outcomes compared to peers living at home, which is in line with a study of Kerker et al. (2015) who showed that on average, a child in out-of-home care has more than 3 ACEs.

Thus, it can be concluded that children placed out-of-home have experienced more ACEs than children who still live at home.

Resilience. Little literature focused on the difference in resilience between children who live at home and children placed out-of-home. Studies that did examine resilience, did not compare these two target groups. Only Greeno et al. (2019) investigated self-esteem, psychiatric symptoms and risk and resiliency in youth who were involved in the child welfare system at that time (n = 37; aged 14-21 years) and former foster youth (n = 254; mean age 22) and found that both groups were more likely to have an extremely poor psychological well-being and resiliency compared to peers living at home. As former foster youth showed low resilience, it is expected that children placed out-of-home show less resilience than children living at home.

Relation between ACEs and resilience. No research has been conducted on whether the relationship between ACE's and resilience is different for children placed out-of-home and children living at home. As existing literature has shown that the number of ACEs is higher for children placed out-of-home (Stambraugh et al., 2014) and have lower resilience (Greeno et al., 2019) than children who still live at home, current study is focused on examining if the relation between ACEs and resilience is also different for those two groups in an explorative manner, without formulation of hypotheses aforehand.

Hypotheses

This study answers two research questions: *'Is the relationship between ACEs and resilience moderated by gender?'* and *'Is the relationship between ACEs and resilience moderated by home placement*?' Based on the discussed studies, it is expected that there is a stronger negative relation between ACEs and resilience for girls than for boys. Since no clear conclusion can be drawn from the existing literature about differences associated with home placement, this study will be used to see if the relationship between ACEs and resilience is different for children living at home and children placed out-of-home.

Relevance

This pilot study is the first to examine possible gender and home placement differences in the relationship between ACEs and resilience in a difficult to reach clinical population of youth. The results of this study will provide important answers that can be used for further development of treatment. When a stronger negative relationship between ACEs and resilience is found for girls, as hypothesized, their treatment could focus more on increasing resilience, for instance, with the Rots & Water intervention (Ykema et al., 2006). Results of this intervention have shown that participants felt more resilient and experienced a more

positive identity after completing the intervention. Since no research has been done on the possible differences in the relation between ACEs and resilience between children living at home and placed out-of-home, this study will fill up this gap in existing literature. When a negative relation is found in one or both of the two groups, treatment could focus on Trauma-Informed Care (TIC; Bartlett & Steber, 2019). This intervention learns children to cope with traumatic experiences. As such, children in clinical care will get better opportunities to deal with their ACE's and regain their resilience and, in the end, better developmental outcomes.

Method

This pilot study is part of a bigger research project conducted by Koraal, a treatment center for youth aged between 0-23 years with (mild) intellectual disorders, behavior-, and/or psychiatric disorders. Koraal provides treatment and, if necessary, residential care (Koraal, 2022). The broader research project concerns a population ACEs and PACEs (Positive and Compensatory Experiences; Koraal, 2022) research program and looks at positive childhood experiences in addition to ACEs.

Participants

The participants in this study were 32 children (17 boys, 14 girls[1] and 1 non-binary child[2]) in care at Koraal, aged between 5 and 25 years (M = 14.10, SD = 5.31), and their parents or caregivers. From those children, 19 of them lived at home, the other 11 lived in foster care. All children were going to school at time of the research.

Procedure

Parents and children in care at two locations of Koraal called Gastenhof and De La Salle were approached by their therapist to participate in this study. An introductory letter was given to the parents, both the children themselves (from 12 years old) and their parents gave informed consent when they agreed to participate. They did not receive compensation for participating. Parents and children who responded to the request received a printed paper or online questionnaire via Qualtrics, distributed by their therapist. The questionnaires asked about positive and negative childhood experiences, sources of strength and support, and resilience. Children of 12 years and older filled in the Children and Youth Resilience Measure about their resilience (Jefferies et al., 2019). Parents filled in the Adverse Childhood Experiences

[1] The degree of resilience was missing for 1 girl; therefore, this respondent was excluded from the analyses.

[2] The non-binary child was excluded from the analyses since this respondent did not fit within the gender measurement of boys and girls.

questionnaire for their children. As few respondents replied to the initial request to participate, therapists asked the non-responding youth in care (and their parents) permission to use existing dossiers for the study. The same information as was asked with the questionnaire was extracted from the records (age, gender, home placement, number of ACEs, resilience) so that the data could be analyzed the same way. The filled-in questionnaires and viewed dossiers were anonymized and analyzed and coded by master and internship students.

Measuring instruments

ACEs. The total number of ACEs (i.e., added together) formed the ACEs score per respondent. The following ACEs were used from the existing codebook of Koraal, based on ACE definitions of Bellis et al. (2013) and Felitti (1998): 'physical neglect', 'physical abuse', 'emotional neglect', 'emotional abuse', 'sexual abuse', 'divorce', 'domestic violence', 'prison', 'substance abuse', 'mental health issues'. The minimum score to be obtained was 0 and the maximum score was 10.

Resilience. For the resilience measure, the number of present factors were added together to create a resilience score for each respondent. The variables for resilience of both the data from the questionnaires as from the files were registered as: 'has friendships', 'has leisure activities', 'is school-going', and 'has support figures', based on the framework of Garmezy et al. (1993). The variables 'is school-going' and 'has leisure activities' were coded using a two-point scale: (1) not applicable and (2) applicable. The variable 'has friendships' was coded using a three-point scale: (1) no friendships, (2) one friendship and (3) two or more friendships. The variable 'has support figures' was also coded with a three-point scale: (1) none to one support figure, (2) two or three support figures and (3) four or more support figures. The minimum score to be obtained was 4 and the maximum score was 10.

Plan of analysis

The data were processed in SPSS. To find out whether there were gender and/or home placement differences in the percentages of the different ACEs and resilience, chi-square tests were performed (as descriptive analyses), besides the *t*-tests (that focused on the mean number of ACEs and level of resilience). Also, a regression analysis was done to determine the relationship between ACEs and resilience for the entire sample. To test the moderating effects of gender and home placement, multiple regression analyses were conducted in which the variables were centered with PROCESS (Hayes, 2017). To answer the first question whether the relation is moderated by gender, a moderation analysis was conducted, using PROCESS. The number of ACEs was the independent variable, gender the moderator, and the degree of resilience was the dependent variable. To answer the second question whether the

relation is moderated by home placement, a similar moderation analysis was conducted with PROCESS. Placed out-of-home or living at home was the moderator and the independent and dependent variable remained the same.

Results

Assumptions

Prior to the analyses, the assumptions of multiple regression analysis were checked. Both the variables ACEs and resilience met the assumptions of linearity (R^2 linear = .015.), homoscedasticity, and normal distribution. No outliers were found in the data, as the standardized residuals were between -1.99 and 1.67. The maximum Mahalanobis Distance was 5.67 and fitted the criteria under 12 (Field, 2018). Cook's distance was .34, also fitting the criteria under 1. The assumption of homoscedasticity met the criteria as the spreading of X and Y scores was equal. The variables were centered before the assumption of multicollinearity was checked with Collinearity diagnostics. Tolerance was .34 and fits the criteria and VIF was 2.91, also met the criteria (Field, 2018).

Descriptive statistics

Table 1 shows the descriptive statistics for ACEs and resilience. The most common reported ACEs were divorce (65.6%), parental mental health issues (40.6%), physical abuse (28.2%) and sexual abuse (25%). There was a significant relation between home placement and sexual abuse, X^2 (1, N = 29) = 6.751, p = .034. The percentages in both groups showed that for children at home the percentage of sexual abuse was significantly lower (6.9%) than for children out-of-home (20.7%). The following percentages were found for the aspects for resilience: was school-going (65.6%), had leisure activities (71.9%) had at least one friendship (37.6%), two to three support figures (50%), four or more support figures (12.5%) and zero to one (9.4%).

The results of an independent samples *t*-test indicated that the difference in mean ACEs between boys (M = 1.88; SD = 1.45) and girls (M = 3.31; SD = 2.18) was significant (t (28) = -2.15; p = .04), with boys showing less ACEs than girls. The difference in mean degree of resilience for boys (M = 6.18; SD = 2.16) and girls (M = 6.23; SD = 2.01) was not significant, (t (28) = -.07; p = .94). The independent samples *t*-test also indicated that the difference in mean ACEs between children living at home (M = 2.63, SD = 2.04) and children placed out-of-home (M = 2.27, SD = 1.74) was not significant (t (28), .49, p = .63). The difference in mean degree of resilience for children living at home (M = 6.11; SD = 2.26) and

children living in foster care (M = 6.36, SD = 1.75), was also not significant (t (28) = -.33, p = .75).

Table 1

Descriptive statistics dependent and independent variables.

	N	Mean	Std. Deviation	Minimum	Maximum
ACEs total sample	30	2.50	1.91	0.00	7.00
ACEs boys	17	1.88	1.45	0.00	5.00
ACEs girls	13	3.31	2.18	0.00	7.00
Resilience total sample	30	6.20	2.06	2.00	10.00
Resilience boys	17	6.18	2.16	2.00	10.00
Resilience girls	13	6.23	2.01	2.00	9.00

Table 2

Correlations between ACEs and resilience for different group.

	Correlation	Sig.
Boys	.386	.126
Girls	-.113	.713
Living at home	.009	.971
Placed out-of-home	.458	.156
Total	. 123	.517

First, the relation between ACEs and resilience for the total group was tested through a regression analysis. The results showed no significant relation, $t\ (30)$ = .71, p = .52. There was no meaningful relation between the number of experienced ACEs and the degree of resilience. However, because it was possible that the relation was significant in one of the subgroups, we did perform the moderation analyses as well.

Gender as moderator

Table 3 shows that the interaction effect between ACEs and gender was not significant, F (3,27) = 0.89, p = .14, R^2 = .10. Also, the main effects of ACEs (p = .12) and gender (p = .80)

were not significant. This result indicates that the relation between the amount of ACEs and the degree of resilience was not significantly different for boys and girls.

Table 3

Multiple regression through moderation.

	Coeff	**SE**	**t**	***p***	**LLCI**	**UCLI**
Constant	6.53	.55	11.93	<.01	5.24	7.18
Gender	-.22	.82	-.26	.80		
Total ACEs	.57	.36	1.61	.12	-.20	.74
ACEs X Gender	-.68	.45	-1.51	.14	-1.57	.26

Note. *The dependent variable is the degree of resilience*. *The independent variables are the number of ACEs and gender*.

Home placement as moderator

Table 4 shows that the interaction between ACEs and out-of-home-placement was not significant, F (3,27) = .52, p = .33, R^2 = .06. Also, the main effects of ACEs (p = .37) and out-of-home placement (p = .97) were not significant. This result indicates that the relation between the number of ACEs and the degree of resilience was not significantly different for children who have been placed out-of-home and children who live at home.

Table 4

Multiple regression through moderation.

	Coeff	**SE**	***t***	***p***	**LLCI**	**UCLI**
Constant	6.10	.49	12.57	<.01	5.39	6.95
OHP	.36	.81	.45	.66		
Total ACEs	.01	.25	.01	.97	-.24	.63
ACEs X Out-of-home placement	.45	.46	.99	.33	-.47	1.40

Note. *The dependent variable is the degree of resilience*. *The independent variables are the number of ACEs and home placement*.

Discussion

In this study, the possible moderating effect of gender and home placement on the relation between ACEs and resilience in a clinical child population was examined. A large body of

research has studied ACEs and resilience and the relationship between them, but few studies have focused on the possible differences in this relationship between boys and girls. There is no research known on possible differences in the relationship for youth living at home or youth placed out-of-home. The findings of this research contribute to the development of interventions designed differently by gender or home placement. A stronger negative relationship between ACEs and resilience for girls, for instance, could ask for treatment focusing stronger on increasing resilience of girls.

Firstly, the relationship between ACEs and resilience was examined for the entire sample. The results of the regression analysis showed no significant result, contrary to the expectation based on previous research (Bethell et al., 2014), suggesting that experiencing more ACEs would lead to reduced resilience. This is possibly explained by the age of the respondents, as research of Masten and Marayan (2012) suggests that resilience develops with age, and younger children may be more resilient than older children. This can certainly be a good explanation for the results of current study, since the sample size contained a broad range of age. If respondents were divided in age groups, a negative relation might have been found among adolescents, which is in line with research of Goldenson et al. (2021) who found that adolescents who had experienced four or more ACEs were less resilient than those with less ACEs. Additionally, Jaffee et al. (2007) indicated that certain levels of stressful life events are associated with positive developmental outcomes in children. This suggests that the relation is possible non-linear (i.e., the relation could be positive until a certain level). Thus, for future research it is recommended to divide the sample in age categories and look further into the possible non-linear relation.

Second, the multiple regression analysis to examine whether gender had a moderating effect on the relationship between ACEs and resilience showed no significant result. Thus, no indications were found that the relation between ACEs and resilience is different for boys compared to girls. However, the independent *t*-test did reveal a significant difference in ACEs between gender, with girls having a higher mean score of 3.31 ACEs and boys having a mean score of 1.88 ACEs, which is consistent with the findings of previous literature (Fellitti et al., 1998). The expectation was that a stronger negative relationship would be found for girls than boys, considering that girls have twice the risk of developing PTSD symptoms after traumatic experiences, which negatively impact resilience (Breslau et al., 1997; Breslau & Anthony, 2007; Horn & Feder, 2018; Telman et al., 2016). A possible explanation is that other factors might influence the relationship, as research has shown that the quality of the parent-child relationship is an important protective factor against the negative effects of ACEs on

resilience (Gewirtz & Edleson, 2007; Masten & Wright, 1998). Another possible explanation, as with the previous analysis, is the age range of the sample. Measelle et al. (2006) found that the relationship between ACEs and internalizing problems was stronger for girls than boys in adolescence but not in childhood. This demonstrates the importance of age group as a factor that may influence the moderating effect of gender, which is recommended to study in future research. Another implication of these findings is that girls in general experience more ACEs and longer-lasting problems, indicating the need for increased attention for their experiences in treatment programs as this could lead to lower resilience.

Third, a multiple regression analysis to examine whether home placement had a moderating effect on the relationship between ACEs and resilience did not show a significant result. In other words, there are also no indications that the relationship between ACEs and resilience is different for youth living at home and those placed out-of-home. No specific expectation was set regarding the strength of the associations since no study has done this research, despite out-of-home placed children having more ACEs and worse health outcomes, and children in foster care showing lower resilience compared to children living at home (Greeno et al., 2019; Stambraugh et al., 2014). A possible explanation for this result is that out-of-home placement does not always lead to reduced resilience, and that specific circumstances of placement and the quality of the placement can influence the child's resilience (Luthar et al., 2005). These findings highlight the importance of understanding the complexity of the effect of out-of-home placement on a children's resilience. Another explanation is that the group of out-of-home placed youth was not homogeneous, possible by the low power of the sample, and there may be variation in the severity and duration of the ACEs they have experienced, which could potentially impact the relation with resilience (Greeson et al., 2011). Further research should focus on the ACEs separately and could address different types of out-of-home placement such as foster- or residential care.

There are several limitations to this study which could also explain the lack of significant effects. First, the resilience measurement used in this study may not be complete enough to capture the full range of resilience in this clinical population, as resilience is different for young children and adolescents (Masten & Marayan, 2012). Because no standardized resilience measurement was used, validity could not be ensured. In future research, it is recommended to specify the resilience measurement and including person characteristics. Also, due to the difficulty collecting data during the COVID-19 pandemic the current study had low power, which could limit the generalizability of the study’s findings.

It can be concluded that no indications were found for a significant moderating effect of gender on the relationship between ACEs and resilience, although the difference in the number of ACEs between boys and girls was significant, indicating the need for increased attention for their experiences. There was also no significant moderating home placement of the children, which may due the complexity of out-of-home placement. The study suggests that future research should focus on specific factors that may contribute to children's resilience and that analyzing smaller age categories might provide clearer results.

References

Afifi, T., & MacMillan, H. (2011). Resilience following child maltreatment: A review of protective factors. *The Canadian Journal of Psychiatry, 56*(5), 266–272. https://doi.org/10.1177/070674371105600505

Andrews, B., Brewin, C., & Rose, S. (2003). Gender, social support, and PTSD in victims of violent crime. *Journal of Traumatic Stress, 16*(4), 421–427. https://doi.org/10.1023/A:1024478305142

Baglivio, M., Epps, N., Swartz, K., Sayedul Huq, M., Sheer, A., & Hardt., N. (2014). The prevalence of Adverse Childhood Experiences (ACE) in the lives of juvenile offenders. *Journal of Juvenile Justice, 3*(2), 1-17. https://doi.org/10.3390/ijerph19031227

Bartlett, J., & Steber, K. (2019). How to implement trauma-informed care to build resilience to childhood trauma. *Child Trends, 9*(10), 1-13. https://doi.org//10.13140/RG.2.2.11496.01284

Bellis, M., Lowey, H., Leckenby, N., Hughes, K., & Harrison, D. (2013). Adverse childhood experiences: Retrospective study to determine their impact on adult health behaviors and health outcomes in a UK population. *Journal of Public Health, 36*(1), 81–91. https://doi.org/10.1093/pubmed/fdt038

Bellis, M., Hughes, K., Ford, K., Hardcastle, K., Sharp, C., Wood, S., Homolova, L., & Davies, A. (2018). Adverse childhood experiences and sources of childhood resilience: A retrospective study of their combined relationships with child health and educational attendance. *BMC Public Health, 18*(1), 792. https://doi.org/10.1186/s12889-018-5699-8

Bethell, C., Newacheck, P., Hawes, E., & Halfon, N. (2014). Adverse childhood experiences: assessing the impact on health and school engagement and the mitigating role of resilience. *Health Affairs, 30*(12). https://doi.org/10.1377/hlthaff.2014.0914

Block, J., & Kremen, A. (1996). IQ and ego-resiliency: Conceptual and empirical connections and separateness. *Journal of Personality & Social Psychology, 70*(2), 349-361. https://doi.org/10.1037/0022-3514.70.2.349

Breslau, N., Davis, G., Andreski, P., Peterson, E., & Schultz, L. (1997). Sex differences in posttraumatic stress disorder. *Archives of General Psychiatry, 54*(11), 1044–1048. 10.1001/archpsyc.1997.01830230082012

Breslau, N., & Anthony, J. (2007). Gender differences in the sensitivity to posttraumatic stress disorder: An epidemiological study of urban young adults. *Journal of Abnormal Psychology*. *116*(3), 607–611, https://doi.org/10.1037/0021-843X.116.3.607

Cicchettti, D., & Rogosch, F. (1997). The role of self-organization in the promotion of resilience in maltreated children. *Development and Psychopathology, 9*(4), 797-815. https://doi.org/10.1017/S0954579497001442

Clarkson Freeman, P. (2014). Prevalence and relationship between adverse childhood experiences and child behavior among young children. *Infant Mental Health Journal, 35*(6), 544-554. https://doi.org/10.1002/imhj.21460

DeGue, S., & Spatz Widom, C. (2009). Does out-of-home placement mediate the relationship between child maltreatment and adult criminality? *Child Maltreatment, 14*(4), 344–355. https://doi.org/10.1177/1077559509332264

Edwards, V., Holden, G., Felitti, V., & Anda, R. (2003). Relationship between multiple forms of childhood maltreatment and adult mental health in community respondents: Results from the adverse childhood experiences study. *American Journal of Psychiatry, 160*(8), 1453–1460. https://doi.org/10.1176/appi.ajp.160.8.1453

Felitti, V., Anda, R., Nordenberg, D., Williamson, D., Spitz, A., Edwards, V., Koss, M., & Marks, J. (1998) Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: The adverse childhood experiences (ACE) Study. *American Journal of Preventive Medicine, 14*(4), 245-258. https://doi.org/10.1016/S0749-3797(98)00017-8

Field, A. (2018). *Discovering Statistics Using IBM SPSS Statistics* (5e editie). California: SAGE Publications.

Garmezy, N., Funder, D., Parke, R., Tomlinson-Keasey, C., & Widaman., K. (1993). Vulnerability and resilience. Studying lives through time: Personality and development. *American Psychological Association,* 77–398. https://doi.org/10.1037/10127-032

Gewirtz, A., & Edleson, J. (2007). Young children's exposure to intimate partner violence: Towards a developmental risk and resilience framework for research and intervention. *Journal of Family Violence, 22*(3), 151-163. https://doi.org/10.1007/s10896-007-9076-1

Greeno, E., Fedina, L., Lee, B., Farrell, J., & Harburger, D. (2019). Psychological well-being, risk, and resilience of youth in out-of-home care and former foster youth. *Journal of Child Adolescent Trauma, 12*(2), 175-185. https://doi.org/10.1007/s40653-018-0204-1

Greeson, J., Briggs, E., Kisiel, C., Layne, C., Ake, G., Ko, S., Fairbank, J., & Pynoos, R. (2011). Complex trauma and mental health in children and adolescents placed in foster care: Findings from the national child traumatic stress network. *Child Welfare, 90*(6), 91-108. https://www.jstor.org/stable/48625371

Goldenson, J., Kitollari, I., & Lehman, F. (2021). The relationship between ACEs, trauma-related psychopathology and resilience in vulnerable youth: implications for screening and treatment. *Journal of Child & Adolescent Trauma, 14*(1), 151-160. https://doi.org/10.1007/s40653-020-00308-y

Hall, K., Stinson, J., & Moser, M. (2018). Impact of childhood adversity and out-of-home placement for male adolescents who have engaged in sexually abusive behavior. *Child Maltreatment, 23*(1), 63–73. https://doi.org/10.1177/1077559517720726

Hayes, A. (2017). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach.* New York: Guilford publications.

Horn, S., & Feder, A. (2018). Understanding resilience and preventing and treating PTSD. *Harvard Review of Psychiatry, 26*(3), 158-174. https://doi.org/10.1097/HRP.0000000000000194

Jaffee, S., Caspi, A., Moffitt, T., Dodge, K., Rutter, M., Taylor, A., & Tully, L. (2007). Nature × nurture: Genetic vulnerabilities interact with physical maltreatment to promote conduct problems. *Development and Psychopathology, 19*(4), 1117-1138. https://doi.org/10.1017/S0954579407000542

Jefferies, P., McGarrigle, L., & Ungar, M. (2019). The CYRM-R: a rasch-validated revision of the child and youth resilience measure. *Journal of Evidence-Based Social Work, 16*(1), 70-92. https://doi.org/10.1080/23761407.2018.1548403

Kerker, B., Zhang, J., Nadeem, M., Stein, R., Hurlburt, M., Heneghan, A., Landsverk, J., & Horwitz, M. (2015). Adverse childhood experiences and mental health, chronic medical conditions, and development in young children. *Academic Pediatrics, 15*(5), 510-517. https://doi.org/10.1016/j.acap.2015.05.005

Koraal, (2022). *Koraal*. Via https://www.koraal.nl

Luthar, S., Cicchetti, D., & Becker, B. (2005). The construct of resilience: A critical evaluation and guidelines for future work. *Child Development, 71*(3), 543-562. 10.1111/1467-8624.00164

Measelle, J., Stice, E., & Springer, D. (2006). A prospective test of the dual-pathway model of bulimic pathology: Mediating effects of dieting and negative affect. *Journal of Abnormal Psychology, 115*(3), 433–444. https://doi.org/10.1037/0021-843x.115.3.433

Masten, A., & Wright, M. (1998). Cumulative risk and protection models of child maltreatment. *Journal of Aggression, Maltreatment & Trauma, 2*(1), 7-30. https://doi.org/10.1300/J146v02n01_02

Masten, A., & Narayan, A. (2012). Child development in the context of disaster, war, and terrorism: Pathways of risk and resilience. *Annual Review of Psychology, 63*, 227-257. https://doi.org/10.1146/annurev-psych-120710-100356

Merrick, M., Ports, K., Guinn, A., & Ford, D. (2020). Safe, stable, nurturing environments for children. Adverse Childhood Experiences. *Elsevier Academic Press*. 329–347. https://doi.org/10.1016/B978-0-12-816065-7.00016-1

Pecora, P., Kessler, R., O'Brien, K., Roller, C., Williams, J., Hiripi, E., English, D., White, J., & Herrick, M. (2006). Educational and employment outcomes of adults formerly placed in foster care: results from the Northwest Foster Care Alumni Study. *Children and Youth Services Review, 28*(12), 1459-1481. https://doi.org/10.1016/j.childyouth.2006.04.003

Piché, G., Bergeron, L., Cyr, M., & Berthiaume, C. (2011) Interaction effects between maternal lifetime depressive/anxiety disorders and correlates of children's externalizing symptoms. *Journal of Child and Family Studies, 20*(5), 596–604. https://doi.org/10.1007/s10826-010-9433-0

Schalinski, I., Teicher, M., Nischk, D., Hinderer, E., Müller, O., & Rockstroh, B. (2016). Type and timing of adverse childhood experiences differentially affect severity of PTSD, dissociative and depressive symptoms in adult inpatients. *BMC Psychiatry, 16*(1), 1–15. https://doi.org/10.1186/s12888-016-1004-5

Schilling, E., Aseltine J., & Gore, S. (2007). Adverse childhood experiences and mental health in young adults: a longitudinal survey. *BMC Public Health 7*(1), 30. https://doi.org/10.1186/1471-2458-7-30

Scully, C., McLaughlin, J., & Fitzgerald, A. (2020). The relationship between adverse childhood experiences, family functioning, and mental health problems among

children and adolescents: A systematic review. *Journal of Family Therapy, 42*(2), 291–316. https://doi.org/10.1111/1467-6427.12263

Stambaugh, L., Ringeisen, H., Casanueva, C., Tueller, S., Smith, K., & Dolan, M. (2013). Adverse childhood experiences in NSCAW. Washington, DC: Office of Planning, Research and Evaluation, *Administration for Children and Families, U.S. Department of Health and Human Services*, 38-58. https://doi.org/10.1080/02739615.2018.1446140

Telman, M., Overbeek, M., Schipper, de J., Lamers-Winkelman, F., Finkenauer, C., & Schuengel, C. (2016). Family functioning and children's post-traumatic symptoms in a reffered sample exposed to interparental violence. *Journal of Family Violence, 31*, 127-136. https://doi.org/10.1007/s10896-015-9769-8

Tolin, D., & Foa, E. (2006). Sex differences in trauma and posttraumatic stress disorder: A quantitative review of 25 years of research. *Psychological Trauma: Theory, Research, Practice, and Policy, 132*(6), 959-992. https://doi.org/10.1037/1942-9681.S.1.37

Van der Linden, A., ten Siethoff, F., & Zeijlenstra-Rijpstra, A. (2009). *Maatregelen van het Burgerlijk Wetboek. In: Jeugd en recht*. Houten: Bohn Stafleu van Loghum. https://doi.org/10.1007/978-90-313-8042-8_5

Wei, J., Gong, Y., Wang, X., Shi, J., Ding, H., Zhang, M., Kang, C., Yu, Y., Wang, S., Shao, N., Chen, L., & Han, J. (2021). Gender differences in the relationships between different types of childhood trauma and resilience on depressive symptoms among Chinese adolescents. *Preventive Medicine, 148*, https://doi.org/10.1016/j.ypmed.2021.106523

Werner, E. (1989a). High-risk children in young adulthood: A longitudinal study from birth to 32 years. *American Journal of Orthopsychiatry, 59*(1), 72-81. https://doi.org/10.1111/j.1939-0025.1989.tb01636.x

Wolff, S. (1995). The concept of resilience. *Australian & New Zealand Journal of Psychiatry, 29*(4), 565-574. https://doi.org/10.3109/00048679509064968

Ykema, F., Hartman, D., & Imms, W. (2006). *Brining it together. Includes 22 case studies of Rock & Water in practice in various settings*. Callaghan, Australia: University of Newcastle, Family action Centre and Gadaku institute. 10.1186/s40359-018-0247-y

Zolkoski, S., & Bullock, L. (2012). Resilience in Children and youth: a review. *Children and Youth Services Review, 34*(12), 2295-2303. https://doi.org/10.1016/j.childyouth.2012.08.009