

Statistical Analysis Addendum  
by Anne Farina, MSW, LCSW

## **Introduction**

In 2017, after many years of providing mental health services, ANADES, with the support of Programa Velasco, began the process of formalizing and systematizing their mental health program. The objective being that a more formalized program could provide evidence-based treatments to maximize the benefit that families receive. Fifty-two adults were surveyed about their history of adverse childhood events and adverse events to which their children had been exposed. Survey participants were also asked about their external supports and internal strengths. This data, together with data from twelve adolescent participants, was reviewed and shared with the staff and supporters. A deeper statistical analysis was done of the responses from the adult survey participants to examine intergenerational trauma.

## **Study Aims**

This study aimed to examine the levels of trauma as well as protective factors that exist among the families served by ANADES and examine the relationship between parental childhood trauma and their children's traumatic experiences and the relationship between their children's traumatic experiences with other factors such as discrimination, community violence, social support, and internal strengths. We hypothesized that their children's traumatic experiences faced in their household would be positively associated with the parental childhood trauma. In other words, the greater reported trauma by the parents would be related to greater reported trauma of their children, showing a direct relationship between parental trauma and their children's trauma. We hypothesized that factors such as community violence and discrimination would also be related to their children's trauma. We also anticipated that social support and internal strengths of the parents would mitigate some of the impact of the parental trauma and therefore decrease the amount of trauma that their children are exposed to. Greater understanding of trauma and factors that impact trauma in this community has the potential to help ANADES and Programa Velasco identify how to best meet their mental health needs.

## **Analysis**

Descriptive analyses were calculated for the variables and covariates. Zero order correlations were examined to assess the relationship between the level of exposure to trauma of the parents' children and other variables. Models of logistic regression were conducted to determine the variables that predicted the level of exposure to trauma of their children. The dependent variable used for the analysis was the children's exposure to adverse childhood events, as reported by the parents. The parent exposure to adverse childhood events, participation in armed conflict, witnessing violence as children, discrimination as a child, discrimination as adult, social support, and internal strengths were the primary independent variables. Demographic covariates included age, education, marital status, and employment.

## **Results**

### **Participant Characteristics**

Table 1 reports demographic characteristics of the 52 parents in this sample. At the time of the assessment, over 67% of the participants were over the age of 30, about 37% completed a Bachelor's degree, over 79% were employed either informally or formally, and approximately 59% were married or with partner. Participants reported an average of 4.73 ( $SD = 2.34$ ) household members and average income of 313.61 ( $SD = 192.05$ ). The mean number of adverse childhood events reported by parents was 9.96 ( $SD = 5.59$ ) and the mean number of adverse childhood events of their children was 4.46 ( $SD = 3.92$ ). Over 48% of the parents reported experiencing discrimination as a child and 38% reported experiencing discrimination as an adult. The mean external support reported was 22.34 ( $SD = 6.87$ ) and the mean internal strength reported was 12.12 ( $SD = 2.98$ ).

Table 1. Descriptive Characteristics ( $N = 52$ )

Variable	$M$ (SD) or $N$ (%)
Gender	
Female	49 (94.23%)
Male	3 (5.77%)
Age	
18-22	2 (3.85%)
23-29	15 (28.85%)
30-49	25 (48.08%)
50 and older	10 (19.23%)
Education	
Primary school	3 (6.25%)
Secondary school	4 (8.33%)
High school	7 (14.58%)
Technical school	16 (33.33%)
Bachelor's degree	18 (37.50%)
Employment	
Unemployed	10 (19.23%)
Informal employment	28 (53.85%)
Formal employment	14 (26.92%)
Income	313.61 (192.05)
Marital status	
Married/with partner	31 (59.63%)
Single/separated/widowed	21 (40.38%)
Number of people in household	4.73 (2.34)
Number adverse childhood events (parent)	9.96 (5.59)
Felt discrimination as child	
Never	26 (50.98%)
Once	4 (7.84%)
More than once	21 (41.18%)
Number adverse childhood events (children)	4.46 (3.92)
Felt discrimination as adult	
Never	31 (62.00%)
Once	7 (14.00%)
More than once	12 (24.00%)
External support	22.34 (6.87)
Internal strength	12.12 (2.98)

## Results

As shown in Table 2, the number of adverse childhood events of the children of participants were significantly correlated with the parent number of adverse childhood events, experience of discrimination as child, and experience of discrimination as adult. This means that the more adverse childhood events of the parents, the higher number of adverse childhood events of their children. The more experiences of discrimination of the parents both as children and adults, their children were exposed to more trauma. The more total support reported by the parents (both external support and internal strengths), their children were exposed to less trauma. The number of adverse childhood events of the children of the participants were not significantly related to their external support, internal strengths, and total support. This means that even if parents reported internal strength and external support, this support did not influence the relationship between parental childhood trauma and the trauma exposure of their children.

Table 2. Correlation matrix of variables

	Number of adverse childhood events of children	Parent number of adverse childhood events	Experience of discrimination as child	Experience of discrimination as adult	External support	Internal strength	Total support
Number of trauma experiences reported	1						
Parent number of adverse childhood events	0.44**	1					
Experience of discrimination as child	0.28*	0.46***	1				
Experience of discrimination as adult	0.57***	0.23	0.53***	1			
External support	-0.11	0.1	0.07	-0.16	1		
Internal strength	0	0.13	0.06	-0.09	0.63***	1	
Total support	-0.08	0.12	0.07	-0.15	0.97***	0.81***	1

\*p<.05, \*\*p<.01, \*\*\*p<.001

Linear regression analyses examined the relationship between the independent variables with increasing adverse childhood events of the children of the participants. Table 3 displays results from these analyses. After controlling for demographic covariates, the number of traumatic events of their children was significantly predicted by the parental number of adverse childhood events ( $B=0.41$ , 95% CI=0.24-0.59) and the experience of discrimination as adults more than twice ( $B=6.19$ , 95% CI=3.71-8.68). Specifically, every increase of one adverse childhood event reported by the parents resulted in a 0.41 increase in adverse childhood events of their children. For parents reporting more than two experiences of discrimination as adults, there was a 6.19 increase in the adverse childhood events of their children.

Table 3. Results of Linear Regression Predicting Children Exposure to Adverse Events

Variable	<i>M</i> (95% CI)
Number of adverse childhood events (parent)	0.41 (0.24-0.59)***
Experienced discrimination as adult	
Never	Reference
Once	-2.01 (-4.93-0.92)
More than once	6.19 (3.71-8.68)***
Experienced discrimination as child	
Never	Reference
Once	3.16 (-0.40-6.72)
More than once	-2.36 (-4.60--0.11)
Total support (external and internal strength)	0.02 (-0.08-.13)
Age	
30-49	Reference
18-22	-0.96 (-5.51-3.59)
23-29	0.34 (-1.83-2.51)
50 and older	0.37 (-2.35-3.08)
Education	
No Bachelor's degree	Reference
Bachelor's degree	-1.12 (-3.17-0.94)
Employment	
Unemployed	Reference
Employed (informal or formal)	-1.48 (-3.69-0.74)
Income	0.00 (-0.01-0.00)
Marital status	
Married/with partner	Reference
Single/separated/widowed	0.72 (-1.02-2.46)
Number of people in household	0.36 (-0.08-0.80)

\*\*\* $p < .001$

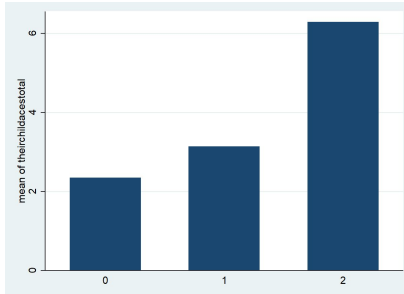


Further analysis revealed that the following adverse childhood events of the parents were related to an increase of the number of traumatic events of their children:

- while growing up during the first 18 years of life, if parent or other adult in the household often swore at you, insulted you, put you down, or humiliated you
- if a parent or other adult in the household often acted in a way that made you afraid that you might be physically hurt
- if a parent or other adult in the household ever hit you so that you had marks or were injured
- saw or heard parents or other adults in the household yelling, swearing, insulting or humiliating each other
- an adult or person at least 5 years older forced you to have sex
- a household member went to prison

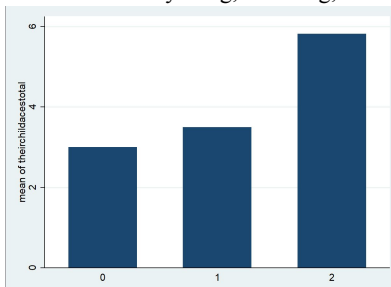
For four of these adverse childhood events, there were significant differences in the mean number of traumatic events their children are exposed to between those who never experienced the event, those who experienced it one time and those who experienced it more than once. For the adverse childhood event “while growing up during the first 18 years of life, if parent or other adult in the household often swore at you, insulted you, put you down, or humiliated you,” there was significant difference between the mean number of adverse childhood events that their children are exposed to for those who reported that this never happened ( $M=2.35$ ,  $SD=2.32$ ), for those that it happened once ( $M=3.14$ ,  $SD=2.54$ ), and for those who reported that this happened more than once ( $M=6.30$ ,  $SD=4.21$ ). This is displayed in Table 4.

Table 4. Mean number of adverse childhood events of children based on the adverse childhood event of parent: “while growing up during the first 18 years of life, if parent or other adult in the household often swore at you, insulted you, put you down, or humiliated you”



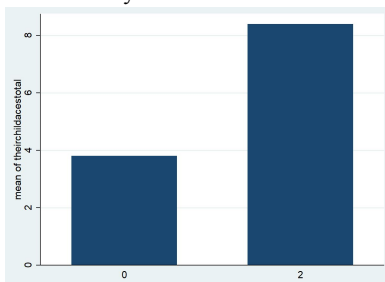
For the adverse childhood event “saw or heard parents or other adults in the household yelling, swearing, insulting or humiliating each other,” there was significant difference between the mean number of adverse childhood events that their children are exposed to for those who reported that this never happened ( $M=3.00$ ,  $SD=3.21$ ), for those that it happened once ( $M=3.50$ ,  $SD=2.65$ ), and for those who reported that this happened more than once ( $M=5.81$ ,  $SD=4.22$ ). This is displayed in Table 5.

Table 5. Mean number of adverse childhood events of children based on the adverse childhood event of parent: “saw or heard parents or other adults in the household yelling, swearing, insulting or humiliating each other”



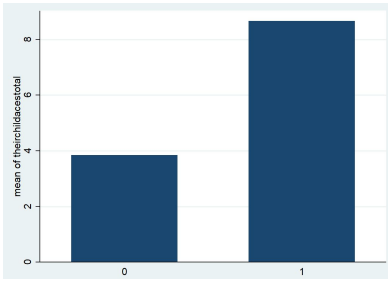
For the adverse childhood event “an adult or person at least 5 years older forced you to have sex,” there was significant difference between the mean number of adverse childhood events that their children are exposed to for those who reported that this never happened ( $M=3.80$ ,  $SD=3.21$ ) and for those who reported that this happened more than once ( $M=8.40$ ,  $SD=6.88$ ). This is displayed in Table 6. It is important to note that none of the participants reported that this happened to them once, five participants reported that this happened to them more than once, and six participants did not answer this question. For those that did not answer this question, the mean of the adverse childhood events that their children are exposed to was 5.67 ( $SD=3.98$ ).

Table 6. Mean number of adverse childhood events of children based on the adverse childhood event of parent: “an adult or person at least 5 years older forced you to have sex”



For the adverse childhood event “a household member went to prison,” there was significant difference between the mean number of adverse childhood events that their children are exposed to for those who reported that this never happened ( $M=3.84$ ,  $SD=3.18$ ) and for those that it happened once ( $M=8.67$ ,  $SD=5.75$ ). This is displayed in Table 7.

Table 7. Mean number of adverse childhood events of children based on the adverse childhood event of parent: “a household member went to prison”



## Conclusion

A trend was detected in generational trauma. Results from the analysis suggest that parent exposure to adverse childhood events and parent experience with discrimination are strongly related to the exposure to adverse childhood events of their children. This finding is consistent with our hypothesis. What was not consistent with our hypothesis was the insignificant impact that external support and internal strength had on the relationship between parent exposure and child exposure to adverse childhood events.