Quantifying the Resilience Process to Disruptive Life Events in Autistic Children

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Scan Me

For a copy of the poster and the R script used for analysis

Study Goal

- This study examines the resilience process related to the mental health of autistic children in response to disruptive life events using a novel statistical approach called 'ARSE' or 'area of resilience to stress events'.

Methods

- Data for this project comes from a larger study examining longitudinal outcomes of 188 families of autistic children.
- Parents reported demographic information (e.g., child age, biological sex, family income) as well as the child's mental health (CBCL; Achenbach & Rescorla, 2001) and autism symptoms (SRS-2; Constantino & Gruber, 2012) across three years (baseline, T2, T3, T4). Each research visit was approximately one year apart.
- This study includes **only those families who reported experiencing at least one disruptive life event (DLE; n=67)** between the baseline and T2 visit (see Table).
- About half of the sample (n=33) reported experiencing 2 or more DLEs.
- Twenty-six families also wrote in additional DLEs. Examples included divorce, school problems, marriage, and parental mental health.

Table 1. Frequency of each DLE reported by the subsample of 67 families.

Disruptive Life Event	Frequency (n, % of sample)
Moved Residence	19 (29.7)
Parent job change or loss	33 (51.6)
Death in the family	28 (43.8)
Major family illness or injury	31 (48.4)
Birth in the family	0

Analysis

- Using R, the ARSE package (Ratcliff et al., 2019) calculates the area created from the magnitude and speed at which individuals return to their baseline level of functioning following a DLE using a series of x-y coordinates.
- **The are of the curve provides a numeric score representing the resilience process, with the T1 score representing an individual's "baseline" (see Figures 1a and 1b).**
  - The region above the curve represents the efficiency of the resilience process – a smaller area reflects a more efficient process (i.e., lower magnitude and faster return to baseline; smaller number) while a larger area reflects a less efficient resilience process (i.e., higher magnitude and slower return to baseline; larger number).
- We used children's externalizing and internalizing symptoms across 3 years to examine how DLEs impact their resilience process as it relates to broad mental health symptoms.
- Multiple regression analyses were used to test for interactions.

Older autistic children in families who perceived DLEs as more stressful had a less resilient process overall compared to younger autistic children.

Figure 3. Interaction between child age and perceived stress of the DLE on resilience scores (externalizing).

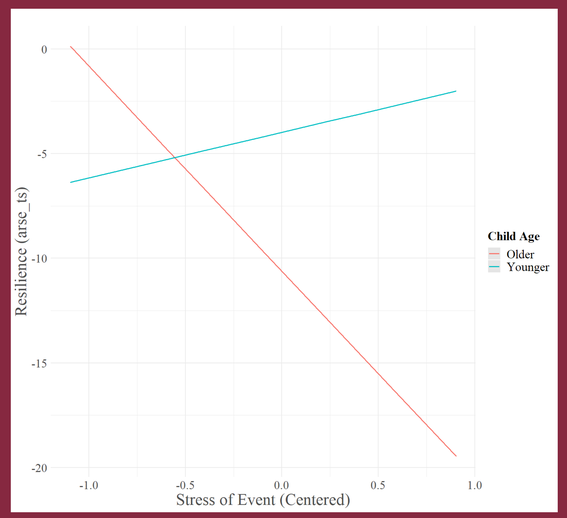
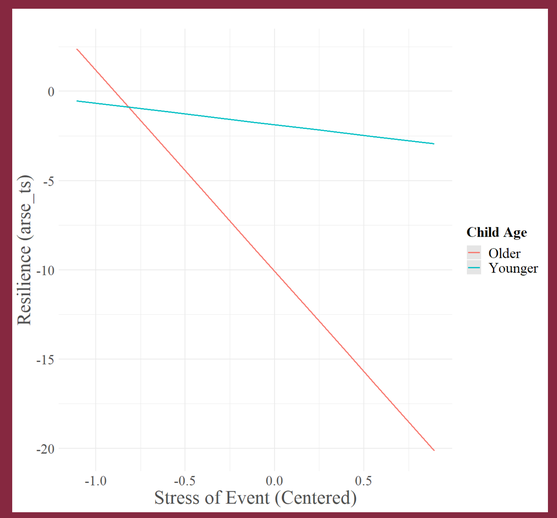


Figure 4. Interaction between child age and perceived stress of the DLE on resilience scores (internalizing).



Externalizing Symptoms

- There was significant variability in the resilience process within the sample (*M* = -6.51; *SD* = 18.56; range = 93.70).
- Arse scores did not differ by DLE type or by perceived stress rating.
- Child age was positively correlated with arse; *r*(66) = .369, *p* = .001 but no other sociodemographic variable or autism symptoms.

Older children (10-12 years old) in households that perceived the disruptive event as highly stressful exhibited less efficient resilience, or higher arse scores compared to younger children (6-9 years old); [*F*(1, 57) = 4.557, *p* = .037; Figure 3].

Internalizing Symptoms

- There was significant variability in the resilience process within the sample (*M* = -5.74; *SD* = 49.55; range = 101.62).
- Arse scores did not differ by DLE type or by perceived stress rating.
- Child age was positively correlated with arse; *r*(62) = .315, p = .013 but no other sociodemographic variable.
- Arse scores were also not related to parent ratings of autism symptom severity.

Older children (10-12 years old) in households that perceived the disruptive event as highly stressful exhibited less efficient resilience, or higher arse scores compared to younger children (6-9 years old); [*F*(1, 58) = 5.213, *p* = .025; Figure 4].

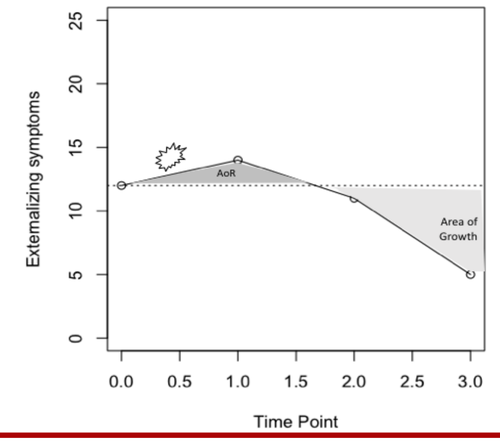


Figure 1a. Individual plot showing area of resilience (AoR) and area of growth

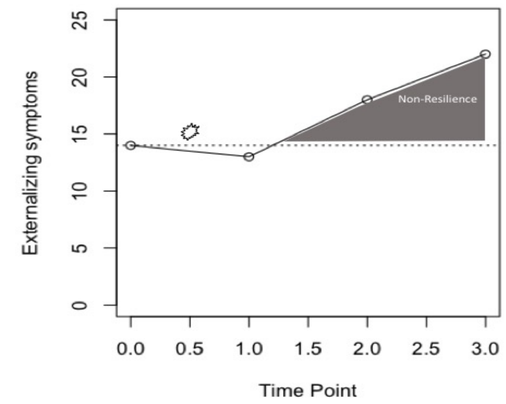


Figure 1b. Individual plot showing the area of non-resilience.

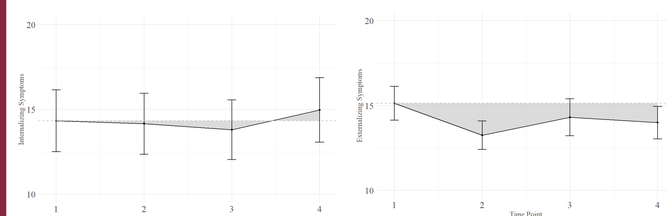


Figure 2. The sample average resilience plots for internalizing (on the left) and externalizing (on the right) symptoms. The plot on the left suggests that autistic children showed some increase in internalizing symptoms but returned to baseline, on average, between the 3rd and 4th timepoint. The plot on the right suggests that autistic children showed higher increases in externalizing symptoms after a DLE and did not, on average, return to baseline functioning.

Special thanks to Krista Bogan for her work on the analysis and data visualizations. We would also like to thank the families and children who participated in this study.

This study was funded, in part, by Funding provided by NIMH to S.L. Hartley, RO1MH099190 and Q. Chang, U54HD090256

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