

The BABLab Newsletter

VOLUME 3 | 2022

Greetings from Dr. Callaghan

Goodbye 2022 and Hello 2023!

On behalf of all the researchers in the BABLab team, I would like to personally thank you for your continued support and investment in the research. Your involvement is revealing new and exciting things about the ways that children, teens and parents navigate their emotional lives, and the interaction between our physical health and our emotions. We have so much to report to you about our progress over the last year.

In this edition of our annual Newsletter you will get to meet several new lab members including graduate student Paul Savoca.

Don't forget to flick to the end of the newsletter for family friendly, fun, STEM activities. Again, we thank you for your support of the Brain and Body Lab, and we hope to see you in the future waves of our research.

Dr. Bridget Callaghan





snapshot of 2022!

The BAB Lab Team is back and better than ever! In-person lab work is now accessible for lab members to come in to access hard copy files, package biological sample kits, and conduct sessions. Following safety protocols, only a maximum of 3 members can be in the lab at a given time.



Parent-Child Interaction Microcoding FIMS

Jennifer Somers, Ph.D.
Post-Doctoral Research Fellow

Parents' real-time responses to their children's emotional displays during discussion of personally-salient emotion experiences constitute a primary, active mode of parent emotion socialization (ES). Although less well-documented than between-family differences, child influences within parent-child interactions reflect fundamental ES processes: how changes in children's emotions elicit responses from their own parents. Studying these child-driven parent ES processes requires special types of data, often referred to as intensive longitudinal data, that reflect the ebb and flow of emotions during social interaction. In the BAB lab, we developed a novel microcoding system to collect intensive longitudinal data on parents' and children's affect and behavior during positive event-planning and problem-solving discussions.

The BABLab's Micro-FIMS Coders:

- **Maisara Sukar**, *Psychology with a minor in Applied Developmental Psychology*
- **Angelina Meng**, *Psychology*
- **Audrienne Ow**, *Psychology with a minor in Society and Genetics*
- **Caitlin Ballantyne**, *Psychology*
- **Jackie Jones**, *Psychology*
- **Madie Bachelor**, *Psychology with a minor in Applied Developmental Psychology*
- **Minella Aghajani**, *Psychology*
- **Natasha Reddivalam**, *Psychobiology*

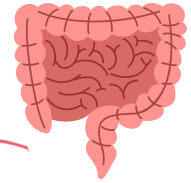
Teams of dedicated undergraduate research assistants are now being trained on this coding system. Preliminary results suggest that we can reliably identify second-by-second changes in emotions! This will allow us to address important but overlooked questions in the literature, including how experiences of early adversity impact child-driven processes during family interactions. Right now, the microcoding system is used for research purposes, but we hope that one day it can be used by mental health professionals to identify and promote healthy parent ES.

Mind, Brain, Body Study:

The Connection Between Childhood Adversity, Emotional Skills, and Health



By Fran Querdasi



Experiencing caregiving adversity (like abuse, neglect, or changes in the caregiving environment) places children at higher risk for mental and physical health difficulties. Investigating factors that link adversity with health outcomes can provide ideas for ways to promote good health in children exposed to adversity by targeting those factors in interventions.

Alexithymia, defined as difficulty identifying and describing emotions, is a socioemotional and cognitive skill that children typically learn from their caregivers. Previous studies have found that adults with higher alexithymia typically report more exposure to childhood maltreatment (Ditzer et al., 2022).

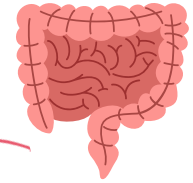
Using data from the Mind, Brain, Body Study, we wanted to look at whether alexithymia levels in childhood would be related to caregiving adversity and/or physical and mental health symptoms.

We analyzed survey responses from 142 children and their caregivers participating in the MBB study on children's history of caregiving transitions, alexithymia, and physical and mental health symptoms.

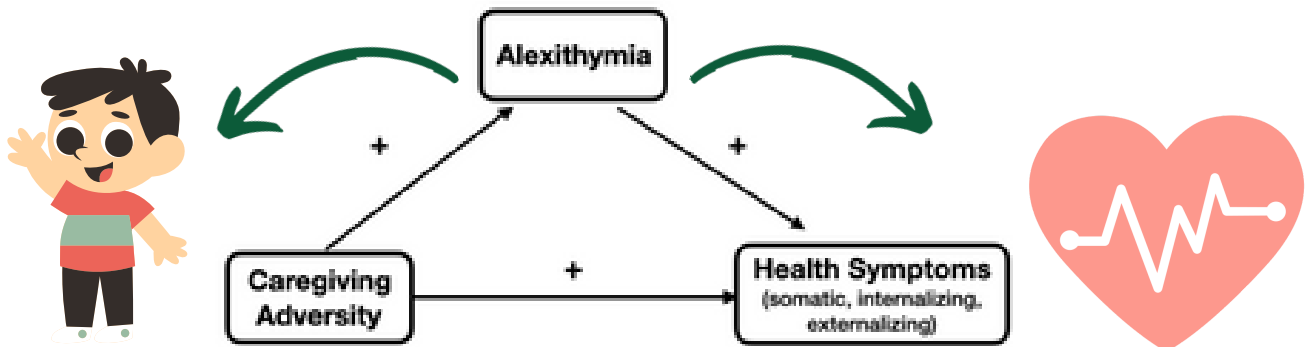
Mind, Brain, Body Study:

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We found that children exposed to transitions in their caregiving environment on average showed more externalizing symptoms (for example, rule-breaking, difficulty paying attention, impulsivity, aggression), internalizing symptoms (for example, sadness, anxiety), and somatic symptoms (for example, headaches, tiredness, stomachaches) than children who were not exposed to any caregiving transitions. Children who experienced caregiving transitions also reported higher levels of alexithymia on average. In turn, children with higher alexithymia tended to have more health symptoms. Finally, we found that alexithymia accounted for some, but not all, of the positive relationship between caregiving transitions and health symptoms.



These results are exciting to us because existing practices, such as mindfulness and helping caregivers talk about emotions with their children, have been shown to reduce alexithymia. Our investigation suggests that these techniques might also be helpful for promoting healthy development in kids exposed to caregiving adversity.

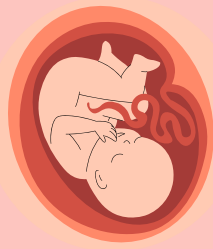
THE SECOND BRAIN STUDY

BY NAOMI GANCZ AND MEREDITH FAIVRE



If you've ever felt butterflies in your stomach before a big presentation, nauseous during an argument, or a pit in your stomach during a test, you might have guessed that our stomach and our brain are interconnected. Through the sympathetic (fight-or-flight) and parasympathetic (rest-and-digest) components of our nervous system, our stomachs and brains talk to each other routinely. In fact, the digestive system has so many nerves around it that you could even call it our Second Brain! But how does the stomach help our brain to think and feel?

The Second Brain Study is hoping to answer these questions. By using electrodes on the skin to measure the natural electrical activity of the stomach, heart, and sweat glands, we are looking at how people's stomachs respond during thinking and feeling tasks in our lab. Our wonderful research assistant, Meredith Faivre, is spearheading this research and we are looking forward to seeing exciting results in her honors thesis this spring!



Sensations of Motherhood

BY PAUL SAVOCA

The Brain and Body Lab recently launched its 'Sensations of Motherhood' study!

The aim of the study is to better understand how pregnant women experience sensations in their own body, and how this is tied to their early experiences, as well as how they think and feel today. We are currently enrolling women (18 - 42 years old) who are in their second trimester of pregnancy with their first child (past pregnancies that did not progress past 12 weeks do not exclude you from taking part in this study). This three part study is spread over the course of approximately 9 months, with each session being conducted remotely and taking only 30 minutes to complete. You can earn up to \$60 for completing the entire study.



Interested in participating?



Please visit:

<https://research.sc/participant/login/dynamic/63060D73-0478-4EB1-AAE7-BEC43C066940>.

The LifeLong Impact of Childhood Adversity on Mental Health

By James Lian

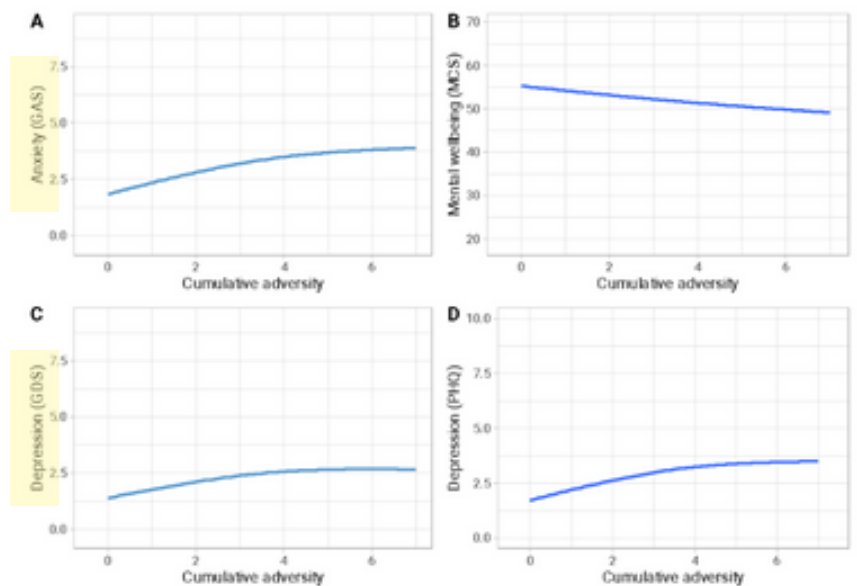


It is well established that early adversity leads to an increased risk of mental health disorders. But does this risk persist throughout the lifespan all the way into older adulthood?

Our research examined 2547 older adults aged between 60-64. We asked about their childhood conditions, which included questions about poverty, physical abuse, verbal abuse, and neglect. Mental health was assessed using four validated mental health questionnaires.

We found that the more childhood adversities these older adults were exposed to, the greater their risk for anxiety, depression, and poor mental wellbeing. This effect remained strong even after controlling for education, gender, and ethnicity.

These results are evidence for the enduring impact of childhood adversity. As such, it is important to consider the childhood environment when assessing older adults at risk of psychopathology. Furthermore, this knowledge will benefit parenting practices, education, and childcare systems.




Note. Higher scores indicate poorer outcomes, except for Mental Wellbeing (MCS) where lower scores indicate poorer outcomes.



DIMENSIONS OF ADVERSITY AND ALEXITHYMIA IN YOUNG ADULTHOOD

By Fran (Ph.D. Student) and Genesis (Research Assistant)

Alexithymia, defined as **difficulty identifying and expressing emotions**, is more common among individuals exposed to caregiving adversity in early life. This is thought to be because exposure to adversity may disrupt the emotional learning that typically happens in the context of caregiver-child relationships. However, research has not yet examined whether specific types of adversity exposure are more strongly associated with alexithymia than others. One popular theory **hypothesizes that there are three distinct dimensions of adversity: threat, deprivation, and unpredictability**. Using data from 355 young adults (ages 18-24 years) who reported on their experiences of adversity in childhood and current alexithymia, we first tested how well the theorized 3-dimensional model of adversity fit our data. When we found that the fit wasn't great, we went back to the drawing board and asked the data to tell us what the best fitting adversity structure was. This process identified three new dimensions: **sexual abuse, physical abuse, and family dysfunction** (encompassing emotional abuse and neglect, physical neglect, and unpredictability). Using these three dimensions derived from our data, we found that **family dysfunction uniquely predicted levels of alexithymia**, above and beyond physical and sexual abuse. Our next steps are to take a closer look at how alexithymia develops in children with exposure to early life adversity using data from our **Mind, Brain, Body** study. Because alexithymia is associated with many different mental health difficulties, but it can be reduced with training, **knowing more about what types of experiences may predispose individuals to alexithymia and how it develops in childhood may help to improve mental health**.



Mind, Brain, Body Study: Positive Parenting Is Positively Associated with More Internalizing Symptoms in Adolescents

By Lorena Gonzalez

Parenting plays a crucial role in the lives of developing youth. Children transitioning from childhood into adolescence begin to carve an independent path where they can develop self-autonomy and experience external influences outside of their familial environment. Thus, it's important to analyze how parents influence their children during a crucial developmental period that may pose youth with the potential risk for mental disorders, like anxiety, which we examine in this study through internalizing behaviors—negative thoughts or behavior directed toward oneself.

Our first research aim asked whether positive parenting in positive contexts differs between early-life adversity (ELS) groups and comparison (biological) groups. In this study, ELS refers to individuals who have previously received institutional support and care.

Our second aim examined whether positive parenting in positive contexts moderates the association between ELS groups and internalizing behavior. In other words, it examines whether positive parenting acts as a safety buffer toward internalizing behavior in ELS groups.

Our hypothesis was that high states of positive parenting in positive contexts will moderate internalizing states in ELS groups.

Throughout our research, we implemented parent-child interaction data and child-behavior data to conduct factor analysis of age and gender to specifically identify any differences in groups and their interactions.



Mind, Brain, Body Study: Positive Parenting Is Positively Associated with More Internalizing Symptoms in Adolescents

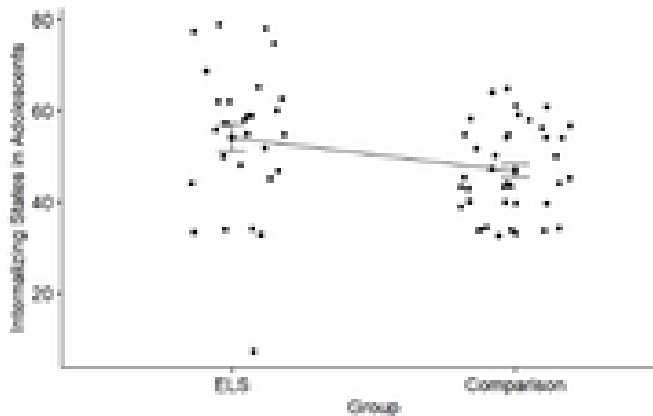


Figure 1. There is a significant difference between "Group" and their internalizing states. ELS adolescents tend to have higher levels of internalizing symptoms compared to Comparison adolescents.

We observed significant differences in internalizing states between ELS and comparison groups—ELS having higher internalizing states across youth—but did not find that positive parenting moderates internalizing states in ELS children and adolescents. Instead, we found the opposite was true of our hypothesis and that higher positive parenting is positively correlated with high levels of internalizing states in adolescents. Such findings prompt us to further research how we define positive parenting and whether positive parenting is truly the best marker for regulating adolescent internalizing states, specifically in the ELS group.

These findings, thus, prompt new discussion for how we may be defining positive parenting. The first explanation may be that when adolescents are highly anxious and have high internalizing symptoms, parents overcompensate by responding overly positively. Another possibility is that we are assuming positive parenting is beneficial for adolescents, but it could be that positive parenting is being misconstrued to resemble overbearing parenting, which may create more anxiety in adolescents. In fact, research conducted in 2014 found that overprotective parenting was significantly associated with anxiety in young adulthood and that individuals who perceived overprotective parenting in early youth reported engaging in maladaptive behaviors as adults (Fulton et al., 2014). Thus, it is possible that what we deem as positive parenting may actually be representing less positive parenting through intrusive parenting styles. Therefore, more research is needed to fully understand the effects of positive parenting on internalizing states in youth as a whole.

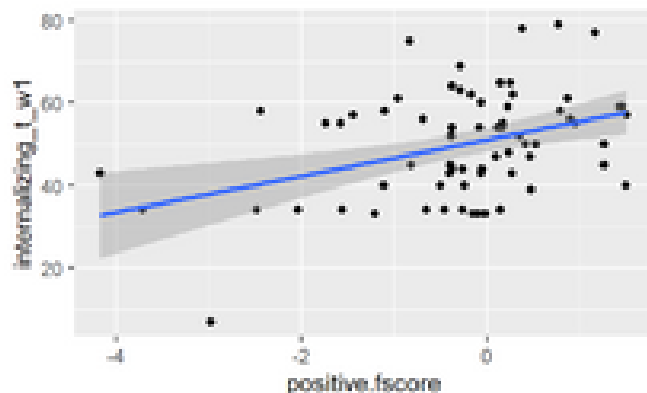
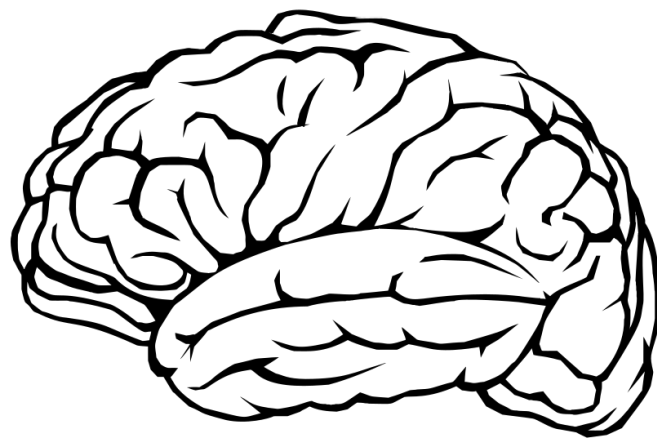


Figure 2. Positive parenting is positively correlated with internalizing states in ELS adolescents. The higher the levels of positive parenting, the higher the internalizing states in ELS adolescents, and vice versa.

A collection of scientific illustrations in the top left corner, including several spherical organisms with spikes and a detailed line drawing of a microscope.

THANK YOU

FOR ANOTHER
GREAT YEAR AT THE



BAB LAB!

A collection of scientific illustrations in the bottom right corner, including several spherical organisms with spikes and a partial line drawing of a DNA double helix.

COLORING PAGE