QUEST
Quality Undergraduate Education and Scholarly Training
The QUEST Program was initiated in 2018 by the Department of Applied Psychology, NYU Steinhardt. The ideas and opinions contained in this publication solely reflect those of the authors and not New York University. All work is licensed under the Creative Commons Attribution Noncommercial No Derivative Works License. To view a copy of this license, visit http://creativecommons.org
Research Proposals

06 Mentorship and Critical Consciousness: Working with Girls in the Juvenile Justice System
  • Shelby Amour Castillo

11 Does Awareness of Self and Privilege Influence Critical Consciousness in Social Justice Advocates
  • Ariyanna Simmons

17 Describing Ambient Noise in Infants’ Home Environments
  • Serena Chen

20 Measuring the impact of maternal action on infants’ object play during spontaneous joint engagement
  • Shayne Thomas

24 Does socioeconomic status moderate the association between infant sleep and recognition memory
  • Judith Konamah

31 Influences of Maternal Postnatal Depression and Stress on Language Acquisition for Monolingual and Bilingual Infants
  • Ivelisse Pedreira-García

39 The Perceptions of Mental Health Among Central Valley Campesinos and Their Youth
  • Yovani Muñoz

44 Low-Income Immigrant Preschoolers’ Social Competence: The Role of Self-Regulation
  • Parsa Najmaie

49 How Teacher Emotional Support Influences Student’s Academic Achievement: The Mediating Role of Social Development
  • Sophia Nguyen

53 Social Support and Maternal Stress: A Proposed Mixed-Methods Study of Single Mothers Experience of New York City Pre-K For All
  • Moira Quinn

58 The Efficacy of Mindfulness-based Parenting Training (MBPT) in Reducing Behavioral and Distruptive Problems among Ethnic Minority Children
  • Hing WIng (Florence) Tse

63 Mindfulness and Autism Spectrum Disorder: The Contribution of Parental Training on Autistic Children’s Academic Performance
  • Salomon Villatoro

Biographies
RISE is directed by Erin Godfrey and Shabnam Javdani. The team’s research and activities serve traditionally marginalized populations, focusing on health and mental health disparities in women and youth who are involved, or at risk of involvement, with the justice system. As such, the RISE Team takes a contextual, multi-level and interdisciplinary approach to systems change and implementing evidence-based practices promoting health and well-being, working closely with community partners to bridge the gap between research and practice.

https://wp.nyu.edu/rise
Mentorship and Critical Consciousness: Working with Girls in the Juvenile Justice System

Shelby Amour Castillo

Adolescent girls at-risk for entering or have already had contact with the juvenile justice system are important teachers that can expand the critical consciousness and social justice of their mentors through their life stories. A plethora of studies have observed the power of mentorship on youth but less have looked at the power of mentorship on mentors themselves (Lindt & Blair, 2017; Mtika & Payne, 2014). More specifically, the power that effective mentorship, which is operationalized through empathic listening, can potentially alter a mentor's perspective and reflection of the world and its intersectional oppressive systems.

Critical Consciousness

Critical consciousness, developed by Paulo Freire, outlines the process of oppressed or marginalized people recognizing the structural systems that subjugate them (Freire, 1973; Watts, Diemer, & Voight, 2011). While this is how it is often operationalized, it is important to recognize the educational burden this places on marginalized individuals to both learn and conquer systems eloquently designed to oppress them. Although it is imperative for marginalized groups to think critically about their oppression, both internally and externally, the beneficiaries of such systems should also be held accountable for perpetuating such oppression. Critical consciousness simplified is, “reflection and action upon the world in order to transform it,” (Diemer, Rapa, Park, & Perry, 2017; Freire, 1993, p. 51), which can be done more effectively by those in power. Those who are in power, knowingly and unknowingly, perpetuate societies that benefit them and subjugate others. However, if the privileged are confronted with and educated on the injustices that marginalized individuals face systematically, they may seek to equalize this imbalance of power. If one hopes to address oppression present in society, it is vital to have a sense of critical consciousness. Altogether, society would benefit from cultivating individuals who are able to critically reflect, and act on society’s injustices in order to effectively and positively transform it using their power. Critical consciousness can be raised through experiential learning and gaining novel perspectives of marginalized people’s lives. One way to gain this perspective and holistically understand systematic oppression is through the mentorship of marginalized people.

Mentorship

Effective mentoring can benefit both mentor and mentee, however, the literature on the positive results of mentorship on youth is more extensive. Resilience theory attempts to understand how youth with adverse experiences still develop positively despite their struggles (Luthar & Cicchetti, 2000). Researchers have found that youth who have strong support systems tend to fare better and have higher resilience (Fergus & Zimmerman, 2005). Mentorship delivers youth an outlet or buffer for their stress by providing a system of social support (Hurd & Zimmerman, 2010). While mentorship helps youth bolster their positive outcomes in the face of adversity, it also benefits mentors through a sense of fulfillment. A study by Ragins and Scandura (1999), observed people’s perceptions of mentorship reliant on if they had been a mentor themselves. They surveyed executives and officials in the workforce and asked them to respond to a 7-point Likert-type scale with items such as “Being a mentor is more trouble than it’s worth.” The results showed individuals without a mentorship experience thought mentorship would be more costly than beneficial while individuals who had been mentors reported gaining a sense of satisfaction and fulfillment from mentoring relationships. In addition, those who had a positive outlook of mentoring had participated in previous mentoring experiences. Therefore, adults with actual, effective mentorship experiences saw the endeavor to be valuable and benefited from the process of being a mentor, especially if they sought out the experience. While there are no articles suggesting that mentorship bolsters critical consciousness, there are many that suggest that people who mentor through empathic listening may be more effective mentors due to their ability to fully comprehend and understand the complexity of their mentee’s narrative.
Mentorship and Empathic Listening. There are a number of texts that speak about the importance of empathic listening for creating strong social and emotional bonds (Bodie, 2011). Empathic listening is operationalized as the active and emotional involvement in conversation (Bodie, 2011). Other articles also define empathic listening as an interpersonal process that involves an active communicative emotional commitment, role-taking, and identification (Myers, 2000; Walker, 1997). This may also be seen as perspective-taking or understanding the viewpoint of others. In one study on active-empathic listening (AEL), researchers looked at how 416 undergraduate students responded to an AEL measure that asked them to self-report on a 7-point Likert-type scale from 1 (never or almost true) to 7 (always or almost always true). The AEL contained items such as, “I assure others that I will remember what they say,” (Bodie, 2011). Results showed that those who scored higher on the AEL produced better conversations and promoted more effective communication in which people felt listened to (Bodie, 2011). This supports the idea that those who are active empathetic listeners can create stronger or more effective social bonds and therefore can develop effective mentoring relationships.

Another study assessed 296 female-identifying students and what made for effective mentoring relationships. The researchers found that mentoring relationships that prioritized relational aspects of the bond such as heightened empathy, engagement, and authenticity were correlated to stronger self-esteem and less loneliness for the mentee (Eby, Rhodes, & Allen, 2007; Liang, Tracy, Taylor, & Williams, 2002). Mentors with increased empathy understood the narrative of the person they were mentoring, which made their mentee feel heard; therefore, mentors who had empathy may have been more critically and actively engaged in the story of the individual they were relating to (Liang et al., 2002). Thus, empathic listening makes for more effective mentorship. This is based on the definition of empathic listening that states that a person must be taking on a role and emotionally invested in positive mentorship. Participating in these actions while being an effective mentor to someone impacted by the juvenile justice system requires a mentor to be critically conscious.

Current Study

The Resilience, Opportunity, Safety, Education, Strength (ROSES) program was founded at New York University (NYU) through the Researching Inequity in Society Ecologically Lab (RISE) laboratory to help foster mentoring relationships between girls in contact with the juvenile justice system and a trained advocate. The aim of the present study is to observe how critical consciousness and social action is influenced in those who mentor girls at risk of or in the juvenile justice system through programs like ROSES and examining whether the said program positively influences mentors’ perspective-taking, and empathic listening.

It is hypothesized that: 1) mentors will have higher scores on scales evaluating critical consciousness, social action, and girls in the system six months after advocacy than they did pre-advocacy; 2) mentors that have high empathic listening skills will have higher scores of critical consciousness; and 3) mentors who have higher critical consciousness will be galvanized to social action.

Method

Participants

There were 46 advocates in total, including 44 women and two who identified as genderfluid. Out of all participants, 43 answered the question of age, which ranged from 19 to 24 (M = 20.35; SD = .91). When asked what race they identified with, three said they identified as Latinx, 15 identified as Black, 10 reported white, and 18 identified as Asian/Pacific Islander. Participants were recruited through the NYU listserv system. Emails were sent to relevant department heads at NYU and disseminated through those departments, including Psychology, Sociology, and Spanish. All participants were undergraduate students at NYU.

Measures

The advocates filled out a variety of measures before admittance into the ROSES program. The measures that were relevant to the current study are outlined below.

Critical Consciousness. To gather information on critical consciousness, advocates were asked to complete the 18-item Critical Reflection subscale of the Critical Consciousness Scale (CCS) developed by Diemer et al. (2017). The first subscale focused on the concept of perceived inequality; essentially how participants viewed the social, economic, and educational inequality in society. They completed items such as, “Poor people have fewer chances to get ahead.” The second subscale of critical consciousness focused on egalitarianism or how
participants perceived the world should be in terms of equality. Participants reported whether they agreed with statements such as, “We would have fewer problems if we treated people more equally,” on a 6-point Likert-type scale ranging from 1 (strongly disagree) to 6 (strongly agree).

**Girls and the System.** In order to understand critical consciousness more holistically and how participants perceived system-involved girls, advocates completed the 17-item Girls and the System scale (GATS). This scale was developed by the RISE laboratory and focuses on the reasons why girls are admitted to the juvenile justice system. Participants reported whether they agreed with statements such as, “Better individual choices would help girls stay out of trouble with the system” on a 4-point Likert-type scale ranging from 1 (strongly disagree) to 4 (strongly agree).

**Social Action.** To examine critical action, participants completed the Social Action scale (SA) which was created by the RISE laboratory to gauge levels of participation regarding social justice issues and activities. Advocates answered questions like, “Have you challenged assumptions and/or address misconceptions about disenfranchised groups to increase their acceptance?” on a 6-point Likert-type scale ranging from 1 (strongly disagree) to 6 (strongly agree).

**Empathic Listening.** Participants completed a 40-item self-report Empathic Listening Scale (ELS), which was also developed by the RISE laboratory. This scale assesses one’s perception of their listening skills and gauges their sense of empathy with items such as, “When someone is talking to me about their problems I should understand how this person thinks about their world,” and, “When someone is talking to me about their problems, I try to understand the meaning behind the speaker’s statements.” Participants reported whether they agreed with each statement on a 5-point Likert-type scale ranging from either 1 (strongly disagree) to 5 (strongly agree) depending on the item.

**Procedure**
Participants completed the survey through Qualtrics (Qualtrics, Provo, UT), an online survey platform, once before they began advocacy training and again at either time point four or at the end of six months. Upon entering the study, participants were first asked to electronically sign a consent form. If they denied, the study ended promptly. If they accepted, participants proceeded to reporting demographic information such as their age, race, socioeconomic status, sexual orientation, gender, and place of birth.

Participants then completed a variety of scales, including the ELS, the CCS (including the two subscales conceptually capturing egalitarianism and perceived inequality, the GATS, and the SA measures. The items within measures, as well as the measures themselves, were presented to participants in random order.

**Data Analyses**
For the current study, a quantitative approach was used. Researchers examined trends in advocate survey responses to all scales from timepoint one (pre-advocate training) to timepoint three (six months post-advocacy) by conducting a t-test comparing the means at these timepoints. For the second hypothesis, a repeated measures ANOVA was conducted in SPSS (IBM, 2017) using scores on the ELS over and under the mean as the grouping variable to see the relationship over time of EL and all other scales.

**Results**

**Critical Consciousness**

It was predicted that advocates’ critical consciousness would be higher at timepoint three than it was pre-advocacy at timepoint one. After conducting a paired samples t-test, the data did not support this hypothesis, showing that advocates’ critical consciousness means did not significantly increase from timepoint one (M = 5.27) to timepoint three (M = 5.43) in the perceived inequality subscale or timepoint one (M = 5.70) to timepoint three (M = 5.72) in the egalitarianism subscale.

It was additionally predicted that the two CCS subscales and social action would be correlated, however the data did not support this hypothesis for perceived inequality (p = .238) or egalitarianism (p = -.271).

**Empathic Listening**

It was predicted that there would be a positive correlation between empathic listening (M = 3.89; SD = .21), and the critical consciousness perceived inequality (M = 5.26; SD = .66) and egalitarianism (M = 5.69; SD = .60) subscales. The data partially supported this hypothesis, showing that advocates’ critical consciousness in the perceived inequality
subscale had a significant positive correlation with empathic listening, \( r = .344, p < .001 \) and but not with the egalitarianism subscale (\( p = .009 \)).

It was also predicted that there would be a strong correlation between the ELS and GATS (\( M = 1.98; SD = .30 \)). The data supported this hypothesis by showing a strong negative correlation, \( r = -.517, p < .01 \).

**Repeated Measures ANOVA**

In order to explore changes over time in empathic listening across different variables, a repeated measures ANOVA was conducted. There was a statistically significant effect of time on perceived inequality \( F(2,22) = 5.06, p < .05 \). There was no statistically significant effect of time on egalitarianism. There was a statistically significant effect of time on social action \( F(2,22) = 5.41, p < .05 \). There was a statistically significant effect of time on GATS \( F(2,22) = 22.88, p < .01 \). Empathic listening did not vary across time as a function of perceived inequality, egalitarianism, social action, or scores on the GATS.

**Discussion**

The present study does not provide support for the hypothesis that advocates’ critical consciousness scores would be higher six months after advocacy compared to pre-advocacy. Results revealed higher critical consciousness perceived inequality mean scores at timepoint three than at timepoint one but the difference was not significant. This is partially expected as working in ROSES requires an advocate to be involved in the lives of their mentees, who are girls in the juvenile justice system. Since their experiences highlight components of the most unequal and oppressive systems that marginalized individuals must face, mentoring them could have the effect of change on the advocates insofar as they are more critical of the systems affecting their mentees. The data being non-significant may be due to the two subscales being uncorrelated at almost zero.

Secondly, it was predicted that there would be a positive correlation between empathic listening, and critical consciousness. Results revealed that higher scores on the CCS were significantly positively correlated with higher scores on the ELS. Thirdly, it was predicted that scores on the GATS scale would decrease, showing that perceptions of the cause of girls’ involvement in the system would become more positive as ROSES continued. This was supported positive as ROSES continued. This was supported by the data, which showed a significant decrease in means from timepoint one to timepoint three. This is in line with the understanding that advocates who are listening empathically to their mentees are generally listening actively without judgment and with the intention of understanding (Liang et al., 2002). This creates an environment where mentees feel heard and supported and where advocates can begin to understand the broader systems their mentees with marginalized identities face.

Lastly, the results on the repeated measures ANOVA show a difference over time, but not as a function of empathic listening for scores on the GATS, Perceived Inequality (PI), and SA measures. The trends, however, for the lines that SPSS produce is consistent with the hypotheses that scores on SA and PI would increase over time and decrease for the GATS for those who are above the mean on the ELS. This may suggest that if the sample size yielded more power, the repeated measures ANOVA data may have supported these hypotheses.

While we know the benefits of mentorship and advocacy for system involved youth, there is a lacuna in the literature on what advocacy can contribute to advocates (Spencer, Gowdy, Drew, & Rhodes, 2019). By mentoring girls in the juvenile system and listening with intention, one may begin to critically grasp the dilemmas marginalized individuals face more holistically. Due to this increased level of consciousness, advocates may galvanize into actions against oppressive systems their mentees face.

**References**


While it is important to pay close attention to the needs of the person being advocated for, it is equally important for an advocate to be aware of the various identities that they hold (Clarke & Drudy, 2006). The awareness of one’s identity can radically transform their approach to advocacy and their outlook on the cause they are advocating for or against. In the context of America, social justice advocates must first be aware of their racial identity, and the privileges (or lack thereof) that are a result of that identity (Mallinckrodt, Miles, & Levy, 2014). It is especially important to look at race because in the context of America, race is often a predictor of socioeconomic status, income, and in many cases, life expectancy (Purkiss, Perrewé, Gillespie, Mayes, & Ferris 2006). These factors are influential in the way people navigate throughout society.

As an advocate, it is vital to understand the role that their own identity plays and how that shapes not only how they view the person they are advocating for but society as well (Lechuga, Clerc, & Howell, 2009). Understanding one’s identity is a fundamental component in developing critical consciousness (CC), the ability to identify and critique inequalities and have the agency to create the necessary change (Lechuga et. al. 2009). Awareness of one’s identity can not only raise CC within themselves, but could also affect the development of CC in the people which they are advocating for (Cartabuke et.al 2019). Extensive research has studied the role of CC in oppressed groups, however there is limited research that evaluates CC in privileged groups. The aim of this study is to examine if awareness of self and privilege influences CC in social justice advocates. It is hypothesized that social justice advocates who are aware of the privileges they hold will have higher levels of CC. Additionally, it is predicted that throughout the course of advocacy, CC and awareness of privilege will increase.

In order to understand the role that the perception of self and privilege plays in the lives of advocates, it is important to have a clear understanding of what privilege is. Phillips and Lowery (2018) define privilege as the unearned advantage derived from one’s group membership. Understanding the ways in which privilege operates allows individuals to examine the privilege present in their own lives and work towards dismantling that privilege (Stoudt, Fox, & Fine, 2012). Privilege is often disregarded because American society is based on meritocracy, the belief that wealth, power, and capital is earned through hard work and talent (Lowery, Knowles, & Unzueta, 2007). Meritocracy can lead to individuals denying their privilege because inequality can be viewed as a lack of hard work and effort instead of social inequality (Liu, 2011). In addition to privilege being cloaked by meritocracy beliefs, privileged groups also engage in both innocence and maintenance motives as defense strategies to protect their benefits (Phillips & Lowery, 2018). Phillips and Lowery (2018) defines innocence motive as the drive for people to cloak their privilege because of the desire for positive self-regard (i.e., for the love and affection of other people). The denial of privilege, specifically racial privilege, typically happens when privilege is framed as anti-Black discrimination (Lowery et al., 2007). Although anti-Black discrimination was not viewed as socially undesirable years ago, there has been a radical shift in the last 20 years in regards to how discrimination is viewed and discussed (Plant & Devine, 1998). Examining the negative and positive connotations of race and privilege is essential to understanding the thought process that is associated with hiding privileges.

The second key component to understanding privilege is maintenance motives. Maintenance motives are actions done to remain privileged (e.g., remaining silent when asked about discrimination in the workplace, avoiding conversations around privilege). Innocence and maintenance motives are tools the privileged use to protect and sustain group advantages (Knowles & Lowery, 2012). It is
important for social justice advocates to be aware of what privilege is and the many ways that it can be concealed because it closes the gap in an advocate’s ability to understand the disadvantages in the lives of the individuals they are advocating for.

**Critical Consciousness**

Paulo Freire, a Brazilian educator and philosopher, created the theory of CC as a way to help Brazilian underclassmen overcome the oppression imposed by the government (1999). Freire believed that if the oppressed groups were able to read, they would be able to critically analyze their inequitable social conditions. Freire viewed CC as a way to redress unequal social structures. The theory of CC has not only been studied within Brazilian society, but has spread to American society as well. Marginalized groups (e.g., people of color, lower-income, disabled) have used CC not only as a coping mechanism but as a way of survival (Thomas et al., 2014). CC theory consists of three components: critical reflection, critical motivation, and critical action (Diemer, Rapa, Voight, & McWhirter, 2016).

Critical reflection is the ability to perceive social, political, and economic inequality. During critical reflection, people have the autonomy to question institutional policies, social arrangements and structures that perpetuate oppression. An example of critical reflection is thinking about the disproportionate representation of people of color in juvenile detention facilities. A person who has the ability to critically reflect would think about various concepts, including: 1) the pathways to detention centers; 2) the effects of being in a juvenile system; and 3) the overarching policies that govern detention centers and the byproducts of those policies. The ability to examine and critique social structures leads to the second important component of the critical consciousness theory which is critical motivation or efficacy.

Critical motivation or efficacy is the belief that the individual themselves has the ability to not only perceive social inequality, but also has the intellectual and physical capacity to address the inequality. Previous research has found that service-learning and other forms of civic engagement can increase a person’s critical motivation (Nagda & Gurin, 2007).

The last component of CC is critical action. Critical action refers to collective and/or individual engagement to change perceived injustices (Watts, Griffith, & Abdul-Adil, 1999). CC not only empowers the oppressed to take ownership of their socio-political conditions but also allows for allies to critically analyze their own privilege and in-turn make steps towards contesting other’s marginalization. Some examples of critical action are marches, protests, and forming activist groups to address social problems. All of the components of CC serve to create a foundation for social justice advocacy.

**Method**

The current study will use data from the Resilience, Opportunity, Safety, Education, Strength (ROSES) Lab research evaluation of an advocacy program for girls involved in or at-risk of being in the juvenile justice system. Data was collected across three time periods: pre-training (T1), post-training (T2), and post-intervention (T3). This present study will use data collected from current ROSES advocates.

**Participants**

Participants (N = 46) were recruited from New York University (NYU). All of the participants were female undergraduate students. Using the university’s network system, students were notified of the opportunity to participate in the study. The study was open to all majors who desired to: a) intern for social justice activism program or b) fulfill a field work requirement. Students who were interested in participating completed the required application and were called in for an interview with the project supervisor.

**Procedures**

Once participants are recruited to be advocates, they were required to attend a 40-hour peer-professional advocacy training. On the first day, participants learned about justice system-involved girls as well as the pathways that lead to detention centers (e.g., assault, robbery, criminal possession of a weapon, behavioral misconduct in schools). On the second day, advocates learned about conceptual frameworks of social justice (e.g., equity, stereotypes, oppression). On the last day of the training, advocates were informed about the fundamental values and principles of being an advocate (e.g., ethics, responsibilities, utilizing resources). Once training was completed, advocates were required to take a post-training advocate survey that included: measures of CC, social action, and perception of self and privilege. Participants were also asked demographic questions (e.g., race/
Measures

Critical Consciousness. Participants completed the Critical Consciousness Scale (CCS; Diemer, Rapa, Park, & Perry, 2017). The CCS consists of 18 items and is measured on a 6-point Likert scale from 1 (strongly disagree) to 6 (strongly agree). The scale was modified to assess the participant’s view on the social inequalities faced by marginalized populations (e.g., youth of color, women, individuals with a low socioeconomic status). The CCS consists of two subcomponents of critical consciousness: critical reflection and critical action. Since the items on the CCS only measured critical reflection, a social action scale was used to measure critical action. Critical reflection is defined as the ability to perceive gender, racial/ethnic, and socioeconomic inequalities. An example of an item that measures critical reflection is “certain racial or ethnic groups have fewer chances to get ahead.” The CCS reflection subscale consists of questions that pivot at their awareness of inequality as well as their perception of what it means to live and operate in an egalitarian society.

Perception of Self and Privilege. In this study, privilege is defined as an unearned advantage given to an individual based on group membership. The Perception of Self and Privilege scale was created by the ROSES research team to examine participants’ perception of self and privilege. Participants were asked to complete a two-item scale in which they answered ‘yes,’ ‘no,’ or ‘unsure’ to “I am a person with privileges.” If ‘yes’ or ‘unsure’ were chosen, the following question asked the respondent to list the what they thought their privileges were.

Social Action. To assess the critical action component of critical consciousness, participants completed a Social Action scale. This scale, created by the ROSES team, measures how often the advocate engages in social justice initiatives. This scale was used to measure the critical action component of the critical consciousness. An example item from the Social Action Scale is “Have you ever attended meetings, conference, or workshops for social action?” The scale was on a 6-point Likert scale from 1 (never) to 6 (usually).

Study Design

This present study is a longitudinal, randomized-control trial. Data was collected from three time points: pre-training (T1), post -training (T2), and post-intervention (T3). This study used both a qualitative and quantitative analysis. In this 3-time point study, we examined if awareness of one’s own privilege influenced CC in social justice advocates. In order to examine differences in the groups over time, a repeated measures ANOVA was conducted. Our analyses tested whether the participating advocates who were aware of their privilege had higher levels of CC.

Results

We conducted a descriptive analysis for the three scales used to measure critical consciousness: CC perceived inequality, CC egalitarianism, and social action. Results indicated that during T1, participants had higher levels of CC egalitarianism (M=5.779; SD =1.796). We also found that Social Action was significantly higher during T2 (M=26.18; SD=1.281). Lastly, perceived inequality was the highest during T3 (M=5.521; SD=1.03).

A repeated measures ANOVA was conducted to examine if awareness of privilege influences critical consciousness in social justice advocates. Our analyses measured privilege from T1. Our results indicated that awareness of privilege did not significantly influence critical consciousness. We did, however, find that time did have a significant effect on perceived inequality F(2,24)=3.768, p<.05. Time also had a significant effect on social action F(2,20)=.778, p<0.05. There was no significant effect of awareness of privilege on an advocates’ views of egalitarianism.

Discussion

The primary aim of the study was to assess if privilege influenced critical consciousness in social justice advocates. Using both a quantitative and qualitative approach, we found that privilege did not have a significant effect on critical consciousness. While these results did not support our hypothesis, we did find results that were aligned with previous literature. We found that perception of inequality and social action was significantly affected by time. Advocates who were engaged in the intervention had higher levels of critical consciousness as time passed. A possible explanation for perception of inequality to be the highest T3 (post-intervention) could be attributed to the advocates being engaged in working with the girls to solve problems that are deeply rooted in injustice. Previous literature has found that actively engaging in social justice initiatives allows people to recognize societal
inequality. Although perception of inequality was highest after the intervention, views of egalitarianism declined, with the highest time-point of this construct being at pre-training. Advocacy trainings could focus on the importance of egalitarianism and given the opportunity to critically analyze egalitarianism in everyday life. Additionally, social action was the highest at post-training. A possible explanation for this is that during post-training, participants were actively engaging with the girls in the program. We found a decline of social action in post-training. Implications for advocacy trainings include implementing information and resources that connect advocates to social justice initiatives in their surrounding communities. It is important to ensure that advocacy work is a continuous act.

**Limitations**

One limitation of our study is that our study may not have been able to detect the effects of privilege on critical consciousness because of our small sample size. Another limitation is that participants may not be able to identify privileges in their life given that the definition of privilege for many is subjective. A definition of privilege could be included in the measure so that participants have a clear understanding of the construct we are aiming to examine.

**Future Research**

Further research should examine if social justice programs and civic engagement activities are a way to deconstruct privilege in advocates. Close attention should not only be paid to the individuals benefitting from advocacy but also to the advocates themselves. Increasing critical consciousness in social justice advocates can lead to more advocates becoming aware of the injustices faced by many. The theory of CC is grounded in the belief that being able to perceive inequality and then take actions is the primary way to dismantle systems of oppression – a goal that should be achieved by social justice advocates. Making advocates aware of the privileges they hold can not only lead to higher levels of critical consciousness but also create radical change in the social justice arena.

**References**


In the Play & Language Lab, we study children’s learning and development across the first years of life, with a focus on how social and cultural contexts influence the skills that children acquire and how they engage with their physical and social environments. Our observations of children and parents in structured tasks and the natural setting of their home environments, provide us with rich video records for detailed coding of children, caregivers, and context.

https://wp.nyu.edu/catherinetamislemonda
Infants can be exposed to ambient noise from a variety of sources, ranging from transportation and construction to media and communication devices such as phones and home voice assistants. For example, a majority of infants are exposed to background television noise, with almost 75% of parents of very young children saying that the television is on “about half of the time” or more, even when no one is watching (Rideout & Hamel, 2006). In addition, most urban populations in industrialized countries are exposed to ambient noise from road, railway, and air traffic (Passchier-Vermeer & Passchier, 2000). Although research has largely focused on television and traffic noise, a few studies have explored what other types of ambient noise are common in infants’ home environments. Generating knowledge on the types of ambient noise found in such environments is the first step towards research on how ambient noise affects infant development, and will allow future research to make distinctions between the types of ambient noise studied.

Frequency of Ambient Noise

Ambient noise in the home environment is negatively related to cognitive development in the first five years of life (Gottfried, 1984; Wachs, 1985, 1986; Wachs & Gandour, 1983). In addition, prior research has found that background television in particular is associated with decreased quantity and quality of parent-child interactions (e.g., Christakis et al., 2009; Kirkorian, Pempek, Murphy, Schmidt, & Anderson, 2009; Pempek, Kirkorian, & Anderson, 2014). Specifically, background television has been correlated with a decreased number of child vocalizations, child vocalization duration, conversational turns, and adult words spoken (Christakis et al., 2009). In addition, background television has been connected to decreased parent involvement and child-parent responsiveness (Kirkorian et al., 2009). The overall number of words, new words, and utterances per minute have also been found to decrease with increased exposure to background television (Pempek et al., 2014). Ambient noise from both road traffic and air traffic have also been shown to have negative effects similar to those of background television. Higher levels of road traffic pattern in the home have been associated with lower levels of parental involvement, verbal stimulation, responsivity, and giving or demonstrating objects to the child (Wachs & Camli, 1991). With regards to air traffic, more ambient noise from airplanes negatively affects memory and reading comprehension skills (Stansfield et al., 2005). Hygge, Evans, and Bullinger (2002) found that long-term memory and reading comprehension skills were impaired in older children who lived in an area where an airport was newly opened, and the same skills improved in children who lived in an area where an airport recently closed.

However, despite the large body of research reporting the findings that ambient noise is detrimental to infants’ wellbeing, there is still research that reports otherwise. Alston and St. James-Roberts (2005) observed the home environments of infants who failed the Ward Infant Language Screening Test, Assessment, Acceleration and Remediation, and were deemed at-risk for language difficulties. They found that these home environments did not involve high levels of ambient noise. Although previous studies have focused on the frequency of television and road and air traffic noises, research has neglected the frequency of other types of ambient noise in infants’ home environments. Research on the frequency of a variety of ambient noise types would allow for comparison between different types of ambient noise and provide further insight into the nature of infants’ home environments.

Stability of Ambient Noise Frequency

The question of whether or not levels of ambient noise are stable over time is a question that has not been addressed in past research. Some homes may have high levels of ambient noise while other homes may usually be quiet, and some homes may have variability in their levels of ambient noise due to factors outside parent control (e.g., construction). In order to understand what infants experience in their homes, research is needed to determine the stability
ambient noise are designed should be informed by such research. For example, the discussion on whether or not a study including ambient noise should be cross-sectional or longitudinal could consider the stability of ambient noise level over time to ensure that the study design is appropriate.

Study Aims

There have been few studies focused on describing ambient noise in a naturalistic setting, specifically infants’ home environments. Past studies have not addressed what types of ambient noise are present in infants’ homes, what the frequency of ambient noise in infants’ home is, and whether or not the frequency of ambient noise in infants’ homes remains stable over time. Data regarding these topics can inform and guide future research on the effects of ambient noise on infants. Therefore, the aim of this study is to fill this gap by investigating ambient noise within middle-income households in the New York City area for infants 13-, 18-, and 23-months old. Ambient noise is defined as noise sorted into five categories: television, communication devices, music/radio, appliances, and transportation/construction.

Method

Participants and Procedure

The sample for the current study consists of 26 infants (13 female), who are 13 (n=15), 18 (n=4), and 23 (n=7) months of age, and their mothers. Participants came from middle-income, two-parent, mother-partner households within the New York City area, and were recruited through hospitals, referrals, and brochures. Most participants identified as white (84.6%). All infants spoke English as their primary language, were the only child in their family, and were born full-term without known disabilities. All families were visited twice for two-hour sessions within one week of each other, and were instructed to go about their everyday routines in their own home while being videotaped by a data collector. Participants received $150 gift cards as compensation for participation in the study.

Measures

Ambient noise. For the purposes of the current study, ambient noise was defined as any audible background sound from the environment. Sounds were divided into five categories: television, communication devices, music and radio, appliances, and transportation and construction sounds. Human and animal vocalizations or any sounds produced as a result of an infant’s object interactions were not evaluated as ambient noise.

Coding

Videos were coded for the presence or absence of the types of noise using the software Datavyu (2014). The two-hour long videos were broken down into 10-second segments, with a total of 720 segments for each video. Coders indicated “y” when each type of ambient noise was heard during each interval, and “n” when there was no noise. Each interval also included a one to two-word description of the sound that occurred in each cell. To ensure inter-rater reliability, each video was coded by two different coders, with the primary coder coding videos in their entirety, and the reliability coder coding 25% of the videos. Every participant had a video coded for both Visit One and Visit Two.

Data Analytic Plan

Ambient noise was operationalized by the number of cells with noise in them per each video. There are a total of 52 videos, with two videos for each participant. Videos were exported from Datavyu to SPSS (Version 25.0), a data analytic software, and a Pearson Correlation was run to examine the relationship between the total frequency of ambient noise in Visit One and the total frequency of ambient noise in Visit Two. Descriptive statistics were also run on SPSS to determine the frequency and distribution of the five types of ambient noise.

Results

There was a significant positive correlation between total frequency of ambient noise in Visit One (M=331.77; SD=217.11) and total frequency of ambient noise in Visit Two (M=270.88; SD=248.29), r=0.629, p<0.001. This result indicates that the level of ambient noise stays stable over time in infants’ home environments. The frequency of ambient noise in general had high variability, with some households having as few as 10 seconds of noise and others having as many as 3.9 hours of noise. Ambient noise from music or radio was the most frequent (M=249.46; SD=302.15), followed by TV (M=154.38; SD=334.67), appliances (M=77.46; SD=80.39), transportation or construction (M=73.12; SD=132.07), and communication devices (M=36.05; SD=86.27).

Discussion

Results from the current study indicate that ambient noise levels in infants’ home environments are relatively stable over multiple visits, which means
that certain homes with high levels of ambient noise at one time point usually have high levels of ambient noise at another time point. Since noise levels are stable, cross-sectional studies may be appropriate in addition to longitudinal studies for studying the effects of ambient noise on infants’ development. Furthermore, high variability of total frequency of ambient noise was found across homes, indicating that not all homes experience the same levels of ambient noise. Future research can explore the differences between homes with very little ambient noise and homes with higher levels of ambient noise as well as the differences between homes with regards to levels of ambient noise separated by type. Data on this research question would allow researchers to determine which types of homes are at-risk for higher levels of TV noise for example, which has been associated with negative effects on infant development. Results from this study also show that the most frequent types of noise in infants’ home environments are TV and music/radio noises, which are both within the parents’ control. Parents have the ability to turn TV and music/radio on and off, and if ambient noise is found to be detrimental to infants’ development, researchers could inform parents of ways to reduce their household’s exposure to ambient noise. There were some limitations to the current study, including the small mostly white, middle-income sample size. Future research should include a larger and more diverse sample, and should investigate links between ambient noise and infant language skill and play behaviors.

References


Measuring the impact of maternal action on infants’ object play during spontaneous joint engagement

Shayne Thomas

Play is important for infants’ development. Different play forms have been linked to different types/stages of development. For example, symbolic play is linked to communication development (Quinn & Kidd, 2019) and functional play is a proxy for infant development (Zelazo & Kearsley, 1980). As infants develop mentally, they engage in more complex forms of play. However, infants’ can learn past their developmental age when they are jointly engaged in the activity with a more advanced learning partner versus when they are learning on their own (Vygotsky, 1978). Joint engagement, a developmental milestone, is when two people coordinate their attention to an object or event of shared interest (Bakeman & Adamson, 1984). Joint engagement can be broken down into several major categories, a few of which are: joint attention, language, and gesture. Several of these categories have been tested for their impacts on sustained attention, language, and object play.

The body of literature suggests that the modalities of joint engagement do indeed scaffold infant development. Infants who spend more time visually attending to objects with a social partner attend to the objects/toys during play for longer periods (Yu & Smith, 2016). Joint attention scaffolds object play in infants (Bigelow, MacLean & Proctor, 2004). Maternal questions during book sharing influence children’s responses, and interestingly, children’s responses also influence maternal questions (Luo & Tamis-LeMonda, 2017). Parental gesture use at 14-months has been associated with infant gesture use at 14-months, which subsequently has been associated with infants’ vocabulary use (Rowe, Oscaliskan & Goldin-Meadow, 2008). Salo, Rowe and Reeb-Sutherland (2018) studied the role of gesture and joint attention use on language development. They found that infants respond to parental gestures and joint attention similarly, however, gestures and joint attention predicts language distinctively.

Deak, Krasno, Jasso and Triesch (2018) investigated the relative contributions of these various modalities of joint engagement, finding that infants most frequently attended to the objects that their mother physically engaged with. That is, maternal action (i.e., the mother’s physical and manual contact with the object) captured the infant’s attention more than maternal gaze shifts, verbalization and pointing gestures. In other words, maternal action captures the infant’s attention more than the aforementioned modalities of joint engagement, namely, joint attention (e.g., maternal gaze shifts), language (e.g., verbalization), or gesture (e.g., pointing gesture).

There is little to no literature on the impact of maternal action on infants’ object play development in real-time and in naturalistic settings. Thus, this study aims to explore the role of maternal action on infants’ object play development. This study hypothesizes that maternal action during joint engagement will be linked to an increase in infants’ sophistication and duration of object play.

Methods

Participants

This study will use data that was collected from thirty-three mother-infant dyads from the New York City metropolitan area. The participants were recruited through hospitals, referrals and brochures. Of the thirty-three infants, 18 are boys and 19 are girls. Seven are 13-month-old crawlers (3 boys, M=13.06; SD=.18), ten are 13-month-old walkers (6 boys, M=13.06; SD=.20), seven are 18-month-old (3 boys, M=17.99, SD=.12), and nine are 23-month-olds (6 boys, M=22.95; SD=.15). Most participants were white and middle-class. All babies were healthy and born at term. Moreover, participants received a $150-dollar gift card for participation.

Measures

Maternal action will be broken down into five types of maternal action behaviors, which are most relevant to scaffolding infants’ object play, including: (1) maternal symbolic use of the object; (2) maternal functional use of the object, (3) timing of the object taken from the infant from the mother; (4) timing of when the mother places the object near the infant; and (5) timing of when the mother offers the object to the infant. All of these will be
coded after video-taped sessions. Coding will take place in the Center for Research, Culture, Development and Education (CRCDE) lab. Each video is approximately 2 hours in length.

Procedure
The videos were collected by 2 experimenters wielding handheld digital cameras inside the homes of the participants (i.e., the mother and infant) during natural activity, which mainly excluded nap time and feeding time. Participants were asked to ignore the cameras as much as possible and go about their daily routine as usual. The data collected by the CRCDE lab will be used for the current study, including the preexisting code for infants’ touch to objects, to code for maternal action (i.e., maternal touch) with the object or related object that the infant was coded as touching. The infants’ play form (i.e. symbolic, functional and sensorimotor) will also be coded.

Planned Data Analysis
This study will run a sequential analysis examining the conditional probability of infant’s play when maternal action is present or absent. Specifically, whether and how infants’ sophistication of play changes as a consequence of maternal action will be assessed— that is, infant play before and after each maternal action will be compared for a rough measure of whether mothers’ manual engagement changes how their infants engage with their world.

Results
This study anticipates to observe a bidirectional relationship between infant play type and maternal action. In other words, maternal symbolic and functional action will influence infants’ symbolic and functional play. Likewise, infants’ symbolic and functional play will influence maternal symbolic and functional action. Taking, offering, and placing an object near the infant will not influence the sophistication of infants’ play. Moreover, when comparing the duration of infants’ solo-sophisticated play with infants’ joint-sophisticated play, the duration of infants’ joint-sophisticated play will be longer.

Discussion
Play is fundamental to the development of infants and joint engagement can scaffold play, thereby, indirectly scaffolding other aspects of development related to play, such as language. The literature suggests that when trying to understand the real-time maternal impact on infants’ development during joint engagement, maternal action beckons consideration. This study will measure the impact of maternal action on infants’ object play type and duration. By understanding the impact of maternal action on infants’ object play development, the field will be one step closer to understanding the underlying mechanisms of joint engagement and scaffolding at large.

Limitations
Symbolic and functional forms of play occur relatively less frequently in infants than sensorimotor play. Sensorimotor play is ubiquitous at this stage of development as infants begin to use their senses to explore the world around them. In other words, instead of seeing our anticipated results (i.e., infants’ symbolic and functional play following maternal action), we may see infants’ sensorimotor play following maternal action, which is likely due to the sheer abundance of sensorimotor play that infants at this stage demonstrate. As a result, if there was an effect of maternal action on infants’ symbolic and functional play, these findings may not be reflected in the data due to the high frequency and duration of sensorimotor play. Another limitation is the clarity of the video recording itself. That is, at times the mother’s back will be facing the camera, making it difficult to infer if she is engaging with the object that the infant is engaging with.

Future directions
This study recommends that other researchers attempt to replicate our study, but with an older sample, perhaps toddlers. Also, as predictive variables, maternal symbolic and functional gestures are worthy of consideration when studying the mechanisms that scaffold infants’ object play.

References


The Infant Studies of Language and Neurocognitive Development, directed by Natalie Brito is a developmental psychology lab interested in the impact of the social and language environment on early neurocognitive development. The ultimate goal of the lab is to understand how to best support caregivers and create environments that foster optimal child development.

http://britobabylab.com
Does socioeconomic status moderate the association between infant sleep and recognition memory

Judith Konamah

The achievement gap describes the disparities in educational performance between children of lower and higher socioeconomic backgrounds (Reardon, 2011). Sleep’s effect on cognitive functioning is linked to the amount of disruptive or non-disruptive sleep that one receives. Research has shown that not enough or lower quality sleep can negatively affect memory performance, academic achievement, and cognitive functioning (Buckhalt 2011; Buckhalt, El-Sheikh, & Keller, 2007). The established link between sleep and cognitive development provides a potential target for intervention; understanding more about sleep and cognitive development of children before formal schooling could be one way to reduce disparities.

Given the significance of sleep, some scientists have already begun to explore the personal and home characteristics that might disrupt a healthy sleep pattern. One of these characteristics is socioeconomic status (SES). Research by Buckhalt and colleagues (2007) found that children (eight to nine years old) from lower and higher SES backgrounds only differed in cognitive outcomes when their sleep was disrupted or had insufficient sleep, with higher-SES children performing better than lower SES children. When these two groups of children received uninterrupted and sufficient amount of sleep, their cognitive performances were the same. This demonstrates that sleep may have a direct impact on cognitive development. The impact that low SES could have on sleep is based on different factors involving overbearing work schedules, overcrowded households, and chronic stressors associated with the scarcity of resources (Buckhalt et al., 2007). This makes it likely that families from lower-SES households will have infants who experience sleep disruptions because of unsuitable sleep environments which can affect their cognitive development.

Studies in adults have shown that sleep affects various kinds of memory. These studies suggest that quality sleep (i.e., total length of sleep and lack of disruptions during the night) promotes abilities such as memory consolidation to retain new learned information (Diekelmann & Born, 2010; Stickgold, 2005), as well as the ability to accurately identify salient emotional expressions in others (Van der Helm, Gujar, & Walker, 2010). A study of 10 months old infant found that there is a link between infant sleep characteristics and cognitive attainments (Scher, 2005). This means that infant sleep quality accounts for their cognitive achievements. Based on these connections, there is reason to believe that sleep can affect different types of memory, for example, infant recognition memory.

There are a number of challenges to studying sleep and memory in infants. First, most of the research on sleep and memory focuses on adults. Some researchers use methods such as video recording infants during sleep, which is more accurate and reliable than parent report measures, but this methodology can be perceived as intrusive (Scher, 2005). Additionally, most of the existing sleep studies have samples predominantly from middle class, white families, and not low-income, race-minority families, resulting in a non-representative sample (Batra et al., 2016; Thomas & Burr, 2009). This problem partially stems from the tension between low income families and the scientific community. Some low-income families have come to distrust the scientific community because of historical inequalities and harm that they faced from participating in research (Shavers, Lynch, & Burmeister, 2002). Therefore, it is vital to maximize the comfort of these families in these settings. This means that even though parent report on sleep is lower in validity, using parent reports may still be a reasonable and less intrusive way to obtain sleep data from low-income households (Scher, 2005).

The current study is interested in investigating associations between sleep and memory development during infancy. More specifically, this study will use a socioeconomically diverse sample to examine how SES factors such as parental income and education moderate the relationship between sleep and recognition memory performance in three- and nine-month-old infants. To examine this question, we will first test the differences in infant
sleep at three-and nine-months of age. Given the existing literature, we predict that more “mature” sleep patterns (more night sleep time and less sleep disruption) will be associated with higher scores on a recognition memory task. Additionally, we will test for the moderation of SES in the association between sleep and memory.

Method

Participants

The final sample included 46 dyads of three months old infants and parents, with data from 31 of the 46 dyads for the nine-month-old infants, see Table 1. The longitudinal study conducts visits at three, nine, and fifteen months of age, but we only used three- and nine-month data for these analyses. Exclusion criteria include: birth before 37 weeks’ gestation, multiple births, or NICU admission. All caregivers provided informed consent for their family’s participation in this study. The families received a $30 compensation for coming to the lab for the visit and approximately $20 for transportation, and $30 if they participated in the home language environment part of the study (LENA recording device). Research procedures were approved and supported by NICHD K99/R00 grant HD086255 to NHB.

Research Design

In this study, we used infant sleep patterns and SES measures to determine the correlation between the variables (i.e., compare infant sleep, and parental SES). This study is a longitudinal design with all measures collected at three-and nine-months of age.

Measures

Recognition Memory Task. The Visual Paired Comparison task is a nonverbal measure of recognition memory and an early measure of declarative memory in infants. This task compares the time the infant spends looking at a familiar versus a novel visual stimulus. In the event that the infant remembers the familiar stimulus, they should look at the novel stimulus for a longer period of time (Morgan & Hayne, 2011; Rose, Feldman, & Jankowski, 2004). For full methods, see Morgan and Hayne’s work (2011).

Infant Sleep Patterns. Infant sleep patterns will be measured using the Brief Infant Sleep questionnaire (BISQ; Sadeh, 2004). The BISQ is a short parent-report questionnaire measuring the sleep habits of measuring the sleep habits of infants between birth and 29 months of age. There are 10 (six open ended and four multiple choice) questions on this questionnaire that are used to evaluate sleep characteristics and patterns such as the quality and quantity of sleep, night wakings, and bedtime.

Family Socioeconomic Status (SES). Family SES will be collected through questionnaires. This study will specifically look at annual household income, an income to needs ratio (ITN), and the levels of education attained by all primary caregivers of the infant participant. ITN is calculated for each participant by dividing the household income by the poverty line (as determined by the U.S. Department of Health and Human Services) for the family size.

Analysis

To analyze the results, first we did a paired samples t-test to examine the differences between three- and nine-months sleep patterns (night sleep hours, day sleep hours, night wakings and total daily sleep). Next, we created a correlational matrix analyses with these variables: maternal education, paternal education, annual household income, annual income bin (a categorical organization of yearly income), income to needs ratio, and for three-and nine-months old, night sleep hours, day sleep hours, night wakings, and total daily sleep. This test helped in identifying any variables that correlated significantly with each other. Lastly, we performed regression analyses to examine how income predicts infant sleep (day, night, and total) for both three-and nine-month-old infants.

Results

Based on the t-test analysis (Table 2), we found that 3-month-old infants sleep significantly less than 9-month-olds at night (t=-3.557, df=30, p=0.001) and 3-month-old infants sleep significantly more than 9-month-olds during the day (t=3.286, df=27, p=0.003). Additionally, 3- and 9-month-old infants do not differ significantly in the amount of total sleep within a full day (t=1.68, df=30, p=0.103) or the number of night wakings (t=1.311, df=28, p=0.201).

Table 3 shows the results for the correlational matrix analysis which suggests that higher maternal education is associated with higher night sleep at three- (r=0.398, p<0.05) and nine- months (r=0.398, p<0.05) and higher total daily sleep at nine-months (r=0.460, p<0.01). The test also showed that higher income is associated with night sleep at both three- (r=0.219, p=0.01) and nine- months of age (r=0.433,
p<0.01). This suggests that there is a positive relationship between high income and high total sleep.

The regression analyses demonstrated that income positively and significantly predicted daily sleep and night sleep for three-and nine-month-old infants. Infants with parents who had higher incomes slept more at night at both 3- (Standardized β=0.489, Adjusted R²=0.219, p=0.001) and 9-months (Standardized β=0.673, Adjusted R²=0.433, p<0.001) compared to infants with parents who had lower incomes. Overall, infants with high income parents slept more daily at both 3- (Standardized β=0.266, Adjusted R²=0.047, p=0.093) and 9-months (Standardized β=0.673, Adjusted R²=0.433, p<0.001) compared to infants with low income parents. This suggests that there is a relationship between parental income and infant sleep.

Discussion

The purpose of this study was to explore the relationship between infant sleep and memory development with moderation effects from SES. Our first research question explored the differences between three- and nine-months-old sleep patterns. The t-test results showed that there is a difference between three and nine-month-old infants sleep which supported our hypothesis. Nine-months-old infants sleep more at night compared to three-month-old infants. This provides additional evidence that as infants grow, they develop more mature sleep patterns which means they sleep less during the day and experience less sleep disruptions at night.

Our preliminary results concerning sleep and SES suggest that SES may affect infant sleep, with infants from high SES backgrounds getting more night sleep compared to infants from low SES backgrounds. The correlational analysis suggests that high maternal education positively correlates infant sleep at both three- and nine-months. It also suggests that high income positively correlates with infant sleep at both three- and nine-months. This shows that high SES does correlate with high infant sleep even as early as three months old. This relationship is indirect, but meaningful for the infant’s memory and future cognitive development. Lastly, the regression analysis also suggested a positive relationship between sleep and income, which is supported by our correlational analysis results. This is very important, in part, because of the achievement gap in schools. Disparities amongst people from low and high SES backgrounds in educational achievement continue to grow. The preliminary results suggest that infant sleep may be even a small place to intervene before their formal schooling even begins.

Some limitations that this study faced was that the data was based on parental reports which might not be accurate. This study was also not an experimental study which means that we cannot assume a causal relationship between our variables. We will continue to further study how sleep affects memory recognition with the visual comparison task in future studies. This will aid us in addressing some of the gaps in literature about sleep, socioeconomic status, and memory in infancy.

References


Appendix

Table 1. Demographics

<table>
<thead>
<tr>
<th>Demographic</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age of infant</td>
<td>46 3-month-olds</td>
</tr>
<tr>
<td></td>
<td>31 9-month-olds</td>
</tr>
<tr>
<td>Race of parent</td>
<td>21.7% Black or African American, 30.4% White, 10.9% Asian, 37% Two or more races</td>
</tr>
<tr>
<td>Ethnicity of parent</td>
<td>41.3% Hispanic or Latino, 58.7% not Hispanic or Latino</td>
</tr>
<tr>
<td>Income</td>
<td>$M=171067.66$, $MED=100000$, $SD=266541.977$, $Range=(2200-1430000)$</td>
</tr>
</tbody>
</table>

Table 2. Paired Samples T-test of Infant Sleep at 3- and 9-months of age

<table>
<thead>
<tr>
<th>Pair</th>
<th>Mean Differences</th>
<th>N</th>
<th>SD</th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pair 1</td>
<td>Night Sleep hours (3mo) - Night Sleep hours (9mo)</td>
<td>528.39 - 582.90</td>
<td>31</td>
<td>85.326</td>
<td>-3.557</td>
<td>30</td>
</tr>
<tr>
<td>Pair 2</td>
<td>Day Sleep hours (3mo) - Day Sleep hours (9mo)</td>
<td>251.79 - 157.68</td>
<td>28</td>
<td>151.53</td>
<td>3.286</td>
<td>27</td>
</tr>
<tr>
<td>Pair 3</td>
<td>Daily Sleep hours (3mo) - Daily Sleep hours (9mo)</td>
<td>775.16 - 730.16</td>
<td>31</td>
<td>149.097</td>
<td>1.68</td>
<td>30</td>
</tr>
<tr>
<td>Pair 4</td>
<td>Night wakings (3mo) - Night wakings (9mo)</td>
<td>2.052 - 0.966</td>
<td>29</td>
<td>4.463</td>
<td>1.311</td>
<td>28</td>
</tr>
</tbody>
</table>

Table 3. Correlational Matrix of Parental SES and Infant Sleep

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Maternal Education</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Paternal Education</td>
<td>0.333</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Annual Household Income</td>
<td>0.338</td>
<td>-0.206</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Annual Income Bin</td>
<td>0.592**</td>
<td>0.426*</td>
<td>0.452**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Income to Need Ratio</td>
<td>-0.053</td>
<td>-0.003</td>
<td>.993**</td>
<td>.474**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Night Sleep hours (3mo)</td>
<td>.355*</td>
<td>.398*</td>
<td>0.151</td>
<td>.489**</td>
<td>0.184</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Night Sleep hours (9mo)</td>
<td>.532**</td>
<td>.556*</td>
<td>0.176</td>
<td>.673**</td>
<td>0.212</td>
<td>.766**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Day Sleep hours (3mo)</td>
<td>-0.122</td>
<td>0.196</td>
<td>-0.204</td>
<td>-0.16</td>
<td>-0.196</td>
<td>-0.241</td>
<td>-0.028</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Day Sleep hours (9mo)</td>
<td>0.249</td>
<td>0.096</td>
<td>-0.054</td>
<td>0.27</td>
<td>-0.05</td>
<td>0.01</td>
<td>-0.23</td>
<td>-0.037</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Night wakings (3mo)</td>
<td>-3.58*</td>
<td>0.028</td>
<td>-0.114</td>
<td>-0.28</td>
<td>-0.124</td>
<td>-0.103</td>
<td>-0.109</td>
<td>0.19</td>
<td>-0.344</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Night wakings (9mo)</td>
<td>-0.261</td>
<td>-0.114</td>
<td>-0.175</td>
<td>-0.205</td>
<td>-0.202</td>
<td>-0.463*</td>
<td>-3.68*</td>
<td>0.164</td>
<td>0.26</td>
<td>0.198</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Total daily sleep (3mo)</td>
<td>0.146</td>
<td>0.364*</td>
<td>-0.036</td>
<td>0.266</td>
<td>-0.003</td>
<td>0.539**</td>
<td>0.543**</td>
<td>0.664**</td>
<td>-0.017</td>
<td>0.098</td>
<td>-0.234</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>13. Total daily sleep (9mo)</td>
<td>0.403**</td>
<td>0.328</td>
<td>0.22</td>
<td>0.460**</td>
<td>0.24</td>
<td>0.307</td>
<td>0.799**</td>
<td>-0.054</td>
<td>0.312</td>
<td>-0.015</td>
<td>-0.243</td>
<td>0.155</td>
<td>1</td>
</tr>
</tbody>
</table>

Note: *p<0.05, **p<0.01
Figure 1. Annual Income and Daily sleep at 3 months. This figure illustrates the regression analysis of parent’s annual income and infant’s daily sleep at 3 months old (Standardized β= 0.266, Adjusted R²= 0.047, p = 0.093).

Figure 2. Annual Income and Daily sleep at 9 months. This figure illustrates the regression analysis of parent’s annual income and infant’s daily sleep at 9 months old (Standardized β= 0.777, Adjusted R²= 0.589, p < 0.001).
Figure 3. Annual Income and Night sleep at 3 months. This figure illustrates the regression analysis of parent’s annual income and infant’s night sleep at 3 months old (Standardized $\beta = 0.489$, Adjusted $R^2 = 0.219$, $p = 0.001$)

Figure 4. Annual Income and Night sleep at 9 months. This figure illustrates the regression analysis of parent’s annual income and infant’s night sleep at 9 months old (Standardized $\beta = 0.673$, Adjusted $R^2 = 0.433$, $p < 0.001$)
Influences of Maternal Postnatal Depression and Stress on Language Acquisition for Monolingual and Bilingual Infants

Ivelisse Pedreira-García

The first year of life is very important in children’s development, specifically for acquiring language (Quevedo et al., 2011). In this learning process, both the quality and quantity of infant-directed and overheard languages play an important role (Kaplan et al., 2014; Ramírez & Kuhl, 2016). Given that prior to 12 months of age, a child’s social network primarily consists of their caregivers, it is important to consider the characteristics of caregivers that may enhance or diminish the home language environment.

The bioecological model (Bronfenbrenner & Morris, 1998) provides a helpful framework for thinking about the role of the caregiver on an infant’s language development. Studies have shown that in the first year of life, when infants are rapidly acquiring language, new mothers are at higher risk of experiencing mental health issues, stress, anxiety, and depression being the most common (Deltsidou et al., 2018; Russell, 2017). Maternal depression can disrupt environmental stimulation and change the degree to which the mother can provide a rich home environment language (Sohr-Preston & Scaramella, 2006). It is also important to look at maternal postnatal stress independently since it has a role without the presence of clinical depression (Miller, Pallant & Negri, 2006). These issues can potentially influence the mothers’ responsiveness and expressiveness, which has been shown to affect the quality of the language input (Lovejoy, Graczyk, O’Hare, & Neuman, 2000; McCabe et al., 2013).

Given the existing literature, we conducted a study to explore how postnatal maternal depression and stress (from biological and self-report measures) is associated with language outcomes in monolingual and bilingual infants between 3– and 9-months of age. Additionally, we directly addressed the gaps in the literature by looking at language acquisition in infancy and the potentially different roles maternal depression and stress can play for monolingual and bilingual infants.

Method

Participants

The final sample (see Table 1) included 46 mother-infant dyads (3-and 9-months old) who were part of a larger longitudinal study at birth. The longitudinal study conducted visits at 3-, 9-, and 15-months of age, but only 3- and 9-month time points were used as data for these analyses. Exclusion criteria included: birth before 37 weeks’ gestation, multiple births, or NICU admission. All caregivers provided informed consent for their family’s participation in this study. The recruitment process consisted of informing families of the study at New York City-wide public events, flyering at neighborhood
common areas (i.e., supermarkets, daycares, laundromats), and through word of mouth from previous participants. The families received a $30 compensation for coming to the lab for the visit, varying compensation to cover their transportation to the lab, and $30 if they participated in the home language environment part of the study (LENA recording device). Research procedures were approved and supported by NICHD K99/R00 grant HD086255 to NHB.

Research design

In this study, we used different measures to determine and compare maternal depression and stress, and infant language performance. This study is a longitudinal design with all measures collected at 3- and 9-months of age.

Measures and Procedures

Hair cortisol analysis. Hair cortisol offers a view of cortisol levels, which is a hormone related to chronic stress (Wright, Hickman, & Laudenslager, 2015). Research assistants in the lab were trained to cut two parental hair samples (approximately 10mg) from the posterior side of the scalp. Based on an average hair growth rate of 1 cm/month, the proximal 3 cm hair segment was used for analysis of chronic stress in the past three months. At the three- and nine-month visits, a hair sample was collected from the parent. Based on an average hair growth rate of 1 cm/month, the proximal 3 cm hair segment was used for analysis of chronic stress in the past three months. Participants were excluded if the parent did not consent to this part of the study, their hair was too short (<2 inches), or their hair was in a protective style (i.e., braids). These samples were outsourced to another lab to be analyzed. Further samples were excluded if the sample was less than 5 mg in mass and too little to analyze. These samples were stored at -20 degrees Celsius and sent to the University of Massachusetts Amherst to be assayed.

Perceived Stress Scale (PSS). The PSS (Cohen, Kamarck, & Merzelstein, 1984) is a 10-item questionnaire that asks about the parent’s feelings and thoughts during the last month, and measures the degree to which situations in one’s life are seen as stressful or overwhelming. The scale ranges from 0 (never) to 4 (very often). Lower scores (0-13) would be considered low stress, scores ranging from 14-26 would be considered moderate stress, and higher scores (27-40) would be considered high perceived stress (Cohen, Kamarck, & Merzelstein, 1983; Department of Administrative Services, 2014). The questionnaire was administered at the end of the visit on an iPad using Qualtrics (Qualtrics, Provo, UT).

Edinburgh Postnatal Depression Scale. The Edinburgh Postnatal Depression Scale (Cox, Holden, & Sagovksy, 1987) is a 10-item questionnaire that is used to identify participants at risk for postnatal depression. It indicates how the mother has felt during the last previous week. If the score is above 13, mothers are likely to be suffering from a depressive illness. This scale has been used and validated in diverse research (Valla, Wentzel-Larsen, Smith, Birkeland, & Slinning, 2016). The questionnaire was administered at the end of the visit on an iPad using Qualtrics (Qualtrics, Provo, UT).

Preschool Language Scales, Fifth Edition. The PLS-5 is a standardized language assessment appropriate for children from birth through age six, with items that identify receptive and expressive language skills (Zimmerman, Steiner, & Pond, 2011). It consists of two standardized scales: Auditory Comprehension (AC), and Expressive Communication (EC).

The PLS-5 is completed at the beginning of each visit and is an interactive, play-based task to examine skills ranging from pre-verbal interaction-based skills to emerging language. For each item, the experimenter codes whether they observed the participant completing the action, whether they (the experimenter) specifically elicited that behavior, or whether the parent reports that they have seen the participant do the action outside of the lab. Additionally, the experimenter codes whether the action was done (1) or not (0). After the visit, a research assistant scores each file for the expressive score, the auditory score, and a total standardized score. These scales have been used and validated in research (Cycyk et al., 2015).

Bilingual Language Trajectory Survey. The bilingual language trajectory survey was developed to consider the fluency and total amount of each language spoken in the infant’s environment at each age point. (1) scores indicate 100% English exposure, (0) scores indicate 50% English and 50% other language, and (-1) scores indicate 100% other language exposure for the infant.

Analysis

To analyze the results, we initially created a
correlational matrix analyses with the following variables: maternal education, annual income bin, bilingualism scores; for 3- and 9-month old's: Edinburgh Scale, PSS, hair cortisol, EC, AC; and 9-month social support. This test helped identify any variables that correlated significantly with each other. Then, we performed a regression analysis with the significant correlated variables to see if these associations held controlling for covariates like income and education.

Results

Initially, we put our measures of interest in a correlational matrix to highlight potential relationships. Table 2 shows the results for the correlational matrix analysis which suggest that higher maternal depression scores are associated with higher nine-month expressive communication scores (r = 0.52, p < 0.01). This association (see Figure 1) was significant in our regression analyses (β=0.469, Adjusted R2= 0.211, p = 0.022), controlling for income and education. Higher maternal depression scores are positively correlated with higher nine-month auditory comprehension scores (r = 0.46, p < 0.05), but this association was not significant in our regression analyses (Figure 2, β= 0.423, Adjusted R2= 0.141, p= 0.054). Higher maternal perceived stress scores are positively correlated with higher nine-month auditory comprehension scores (r=0.46, p< 0.05) and this association was significant in our regression analyses (Figure 3, β= 0.453, Adjusted R2= 0.153, p = 0.046). Higher bilingualism scores are negatively correlated with nine-month auditory comprehension scores (r= -0.44, p< 0.01).

The regression analyses also showed that controlling for income and education, a higher bilingualism score does not moderate the relationship between maternal depression and infant language (Table 3, Bilingualism interaction β= -0.139, p = 0.587; Model Adjusted R2=0.454, p=0.012). Additionally, controlling for income and education, a higher social support score positively moderates the relationship between maternal depression and infant expressive communication (Table 3, Social support interaction β= 0.427, p= 0.021; Model Adjusted R2=0.578, p=0.002).

Discussion

Our hypothesis concerning the influence of postnatal maternal depression and stress on infant language acquisition for monolinguals and bilinguals was not supported by the data or consistent with the literature. Higher maternal depression and stress scores were associated with higher language scores for 9-months old. A speculative argument for why the results did not go according with the hypothesis was that within our participants, only four moms scored the minimum amount on our survey to be considered clinically depressed. Our sample is not representative. We predicted that our sample would exhibit this, but even if our mothers aren’t clinically depressed, they can still show depressive symptoms that may impact the home environment. Therefore, a bigger sample and future studies with more variability is suggested. We also suggest future studies about how maternal mental health impacts children with greater linguistic and social abilities. Additionally, we found that a higher social support score positively moderates the relationship between maternal depression and infant expressive communication. Future studies would further suggest that maternal social support has some positive value for infant language development.

We also found that the higher the bilingualism scores, the lower the 9-month AC scores. A possible explanation for this is that the dominant language at home could be different to the one the test was administered in, which is English. For further studies, we can take a look at the home environment adult words (using the Language Environment Analysis; LENA), to have a better understanding of the language exposure that infants have.

With further research in this field, specific interventions can be tailored for bilingual families and mothers dealing with depression and stress. This information can be provided to parents, health professionals, and speech pathologists to create awareness of the importance of maternal mental health and prevention of postnatal mental illnesses with regard to language outcomes for infants.

References


Appendix

Table 1. Demographics

<table>
<thead>
<tr>
<th></th>
<th>46 3-month-olds</th>
<th>31 9-month-olds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age of Infant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Race of Parent</td>
<td>21.7% Black or African American, 30.4% White, 10.9% Asian, 37% Two or more races</td>
<td></td>
</tr>
<tr>
<td>Ethnicity of Parent</td>
<td>41.3% Hispanic or Latino, 58.7% not Hispanic or Latino</td>
<td></td>
</tr>
<tr>
<td>Annual Household Income</td>
<td>M=171067.66, MED= 100000, SD=266541.977, Range= (2200-1430000)</td>
<td></td>
</tr>
<tr>
<td>Infant Language Exposure</td>
<td>16 monolingual infants</td>
<td>25 bilingual infants</td>
</tr>
</tbody>
</table>

Table 2. Correlations between SES, infant language performance, infant bilingualism, maternal depression, maternal stress, and social support

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Maternal Education</td>
<td>1</td>
<td>.59**</td>
<td>0.04</td>
<td>0.09</td>
<td>-.04</td>
<td>.19</td>
<td>-.42*</td>
<td>.30</td>
<td>.15</td>
<td>.26</td>
<td>.07</td>
<td>.23</td>
<td>-.05</td>
<td>.01</td>
</tr>
<tr>
<td>2. Income Year Bin</td>
<td>1</td>
<td>.05</td>
<td>-0.02</td>
<td>-.16</td>
<td>-.02</td>
<td>-.17</td>
<td>-.06</td>
<td>.39*</td>
<td>.32</td>
<td>0</td>
<td>-.06</td>
<td>-.24</td>
<td>-.26</td>
<td></td>
</tr>
<tr>
<td>3. 3-month Edinburgh Scale</td>
<td>1</td>
<td>.72**</td>
<td>.80**</td>
<td>.56**</td>
<td>.02</td>
<td>.02</td>
<td>-.26</td>
<td>-.23</td>
<td>.25</td>
<td>.25</td>
<td>.09</td>
<td>.21</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. 9-month Edinburgh Scale</td>
<td>1</td>
<td>.62**</td>
<td>.82**</td>
<td>-.30</td>
<td>-.43</td>
<td>-.57**</td>
<td>-.16</td>
<td>.21</td>
<td>.52**</td>
<td>.35</td>
<td>.46*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. 3-month PSS</td>
<td>1</td>
<td>.44*</td>
<td>.10</td>
<td>-.12</td>
<td>-.51**</td>
<td>-.35*</td>
<td>.28</td>
<td>.08</td>
<td>.24</td>
<td>.25</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. 9-month PSS</td>
<td>1</td>
<td>-.46*</td>
<td>-.48*</td>
<td>-.48**</td>
<td>-.23</td>
<td>.19</td>
<td>.33</td>
<td>.38</td>
<td>.46*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. 3-month hair cortisol</td>
<td>1</td>
<td>.71</td>
<td>.18</td>
<td>-.38</td>
<td>-.02</td>
<td>-.30</td>
<td>-.17</td>
<td>-.33</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. 9-month hair cortisol</td>
<td>1</td>
<td>-.06</td>
<td>-.59</td>
<td>-.37</td>
<td>-.09</td>
<td>-.43</td>
<td>-.73</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. 9-month social support</td>
<td>1</td>
<td>.37</td>
<td>-.05</td>
<td>-.07</td>
<td>-.46*</td>
<td>-.61**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Bilingualism scores</td>
<td>1</td>
<td>-.08</td>
<td>.15</td>
<td>-.19</td>
<td>-.44*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. 3-month EC</td>
<td>1</td>
<td>.13</td>
<td>.20</td>
<td>.10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. 9-month EC</td>
<td>1</td>
<td>.03</td>
<td>.19</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. 3-month AC</td>
<td>1</td>
<td>.48*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. 9-month AC</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: p<0.01, *p<0.05; green colored boxes represent positive significant correlation and red colored boxes represent negative significant correlations
Figure 1. 9-month Edinburgh Scale and 9-month Infant Expressive Communication. This figure illustrates the regression analysis of 9-month Maternal depression and 9-month Expressive Communication controlling for parental income and education ($D=0.469$, Adjusted $R^2=0.211$, $p=0.022$)

Figure 2. 9-month Edinburgh Scale and 9-month Infant Auditory Comprehension. This figure illustrates the regression analysis of 9-month Maternal depression and 9-month Auditory Comprehension controlling for parental income and education ($D=0.423$, Adjusted $R^2=0.141$, $p=0.054$)
Figure 3. 9-month Perceived Stress Scale and 9-month Auditory Comprehension. This figure illustrates the regression analysis for 9-month Maternal stress and 9-month Auditory Comprehension controlling for parental income and education. (D= 0.453, Adjusted R2= 0.153, p = 0.046)

Table 3. Regression analyses examining the moderation effects of social support and bilingualism on the association between maternal depression and infant expressive communication at 9-months

<table>
<thead>
<tr>
<th>Variable</th>
<th>β</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model 1</strong> (Adjusted R²=0.454, p=0.012)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maternal Education</td>
<td>.375</td>
<td>115</td>
</tr>
<tr>
<td>Annual Income Bin</td>
<td>-.241</td>
<td>.291</td>
</tr>
<tr>
<td>Edinburgh</td>
<td>.672</td>
<td>.002*</td>
</tr>
<tr>
<td>Bilingualism score</td>
<td>.479</td>
<td>.068</td>
</tr>
<tr>
<td>Edinburgh*Bilingualism Interaction term</td>
<td>-.139</td>
<td>.587</td>
</tr>
<tr>
<td><strong>Model 2</strong> (Adjusted R²=0.578, p=0.002)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maternal Education</td>
<td>.441</td>
<td>.042*</td>
</tr>
<tr>
<td>Annual Income Bin</td>
<td>-.336</td>
<td>.114</td>
</tr>
<tr>
<td>Edinburgh</td>
<td>.756</td>
<td>.0004**</td>
</tr>
<tr>
<td>Social Support</td>
<td>.201</td>
<td>.279</td>
</tr>
<tr>
<td>Edinburgh*Social Support Interaction term</td>
<td>.427</td>
<td>.021*</td>
</tr>
</tbody>
</table>
L-FELD
The Latino Family Engagement and Language Development (L-FELD)

PI: Gigliana Melzi + Adina Schick
Mentor: Nydia Prishker

L-FELD is directed by Gigliana Melzi, and Adina Schick. L-FELD follows a partnership-based model, the investigations stemming from the team address the socio-cultural contexts of Latino and African heritage child development. In one set of projects, we investigate the ways culture, as transmitted in daily adult-child interactions both at home and at school, shape preschoolers’ development of school readiness skills, and in particular their language and emergent literacy skills.

https://wp.nyu.edu/steinhardt-ifeld
The agricultural industry in the United States (U.S.) depends heavily on the labor of foreign-born populations of farmworkers. The Department of Agriculture has estimated that about half of the United States farmworkers are unauthorized and are mainly concentrated in states where agriculture is important, such as California. This workforce is important because they are found to do a variety of occupations (i.e., farm managers, supervisors, agricultural inspectors, livestock workers) for the agricultural industry (Farm Labor, 2019). The National Center for Farmworker Health ([NCFH]; NCFH, 2018) reported that 73% of all farm workers or campesinos were born in a country other than the U.S. The campesino population is composed of people from diverse ethnic backgrounds; more specifically, 69% of this population is of Mexican origin (NCFH, 2018).

According to the Farmworker Housing Development Corporation ([FHDC]; FHDC, 2019), farmworkers fall into three categories: Permanent, Seasonal, and Migrant. The FHDC describes permanent farmworkers as those individuals who have farm work as a primary source of income that consists of a constant year-round salary or wage. Seasonal farmworkers are individuals employed in farm work for a minimum of 25 days per year with earnings of at least $400 during a 12-month period and mainly employed on a seasonal basis without a constant year-round salary or wage. Lastly, migrant farmworkers are individuals who are required to travel and temporarily establish a home base besides the permanent place of residence while employed in one or more locations. This proposal will investigate how the campesino population conceptualizes mental health and its influence on their families, including their children.

**Conceptualization of Mental Health**

Mental health is among the highest public health issues in the United States, more specifically, suicide is among the top ten causes of death nationwide (NIMH, 2019). The suicide rate for Hispanics within the United States is 6.9 percent; while it is the lowest rate when compared to other ethnic groups, it is nevertheless important to investigate in order to prevent and reduce suicide rates within this population (SPRC, 2017). There are a few studies that have investigated how mental health is conceptualized among the campesino population and more specifically, how it is dealt with when it affects their youth. For example, in the Mexican Immigration to California: Agricultural Safety and Acculturation (MICASA) Study, O’Connor, Stoecklin-Marois, and Schenker (2015) conducted structured interviews with farmworkers in Mendota, California. Their findings show how the cultural idiom known as nervios or “nerves” was associated with low family incomes, drug use, medium or high of acculturation, and poor housing conditions. Nervios refers to depressive symptoms, stress-related experiences, or anxiety symptoms within a cultural context that goes beyond Western notions of mental health (O’Connor et al., 2015).

Another term conceptualized across Latinx culture was introduced in the work of Rubel, O’nell, and Collado (1985) when investigating the meaning of susto or “fright,” which is regarded as a folk illness and implies a physiological health problem. Susto refers to the belief of the human spirit leaving the body because of a disturbance from an experience of fright. Associated symptoms can be a loss of appetite, strength, and weight, sleep difficulties, lack of energy, and lack of motivation. The use of susto is understood in terms of physiological and somewhat a psychological perspective, but researchers are not in full agreement as to how it relates or associates to mental health. Weigel and colleagues (2007), analyzed a dataset from a questionnaire that, in part, looked at some ethno-specific conditions among migrant and seasonal farmworkers. Some of the ethno-specific conditions were corajes or “frustration or anger,” latidos or “rapid heart palpitations,” aires or “airs,” which refers to muscle pain in the ribs because of an abrupt change in ambient temperature, empacho or “gastrointestinal illness,” and sustos/espantos or “frights.” The study found that symptoms of nervios
were associated with food insecurity (e.g., concern over food availability or inventory) in farm workers. Furthermore, Pulgar et al. (2016) found that a third of women within farmworker families had depressive symptoms, especially if there was an experience of economic hardship. Thus, a handful of studies have described mental health within the context of Latinx populations but more so through a physiological lens rather than a psychological framework.

Adolescents’ perceptions of mental health differ from the perceptions of their immigrant parents because of the recognition of Western notions. Garcia and Saewyc (2007) conducted an ethnographic study on the health-related perceptions of Latinx adolescents over mental health perceptions, which revealed that seeking mental health services were not the first thoughts to feeling better, but through family or friends. Within the study, adolescents from immigrant families expressed their mental health in three thematic patterns of either mentally healthy, mentally unhealthy, or health promotion. Sequentially, García, Gilchrist, Vazquez, Leite, and Raymond (2011) produced a study that described Latinx youths’ and adults’ knowledge of their community resources when seeking mental health services for adolescents as well as the cultural beliefs around seeking mental health services. The study’s findings suggest that about a fourth of the participants were aware of mental health resources for Latinx adolescents and many of the participants seemed to be willing to seek formal mental health care. Findings indicated that Latinx youth would prefer culturally appropriate services when seeking formal mental health care (Garcia et al., 2011).

There are health disparities within the campesino population as well. For example, Anthony, Williams, and Avery (2008) investigated both migrant and seasonal farmworkers and focused mainly on physiological issues and service needs. Findings demonstrated that the most common issues faced by these two farmworker groups were work-related health problems and perceived chronic illness. They also reported that the most requested services were related to dental services because of the cost of dental to receive treatment and being underserved, in which can create psychological stress. In a sample of school-age children, Taylor and Ruiz (2017) collected reports from children of Latinx migrant farmworker families, who reported experiences of loneliness, economic hassles, and discrimination indicated levels of anxiety and depression.

**Familismo as a Protective Factor**

In the study of Bacallao and Smokowski (2007), the decision to immigrate into a new country or nation has come with a “cost” for wanting to get ahead (e.g., work opportunities and children’s education) for Latinx families. Consequently, it has created a new set of challenges (e.g., less family time and adolescents feeling lonely), but the Latinx families have been able to maintain through the reinforcement of familismo, which has been shown to be beneficial. Familismo or familism refers to the positioning of the family before the self because individual behavior can reflect the family (Smokowski & Bacallao, 2007). The individual has a sense of obligations towards their family (Marsiglia, Parsai, & Kulis, 2009) and focuses on the importance of commitment to their families such as loyalty, closeness, good relationships with the core and extensive family (Ayón, Marsiglia, & Bermudez-Parsai, 2010; Blanco, 2017). The individual considers their family of great importance due to Latinx having a collectivistic nature (Piña-Watson, Ojeda, Castellon, & Dornhecker, 2013); familismo also includes obedience and respect for authority figures within the family system (Stein, Gonzalez, Cupito, Kiang, & Supple, 2015). The role of familismo has cultural importance to the Latinx population and studies have shown how significant it can be for both Latinx family systems and the individual.

Studies have shown how familismo can serve as a protective factor at the family system and individual level. For instance, Marsiglia et al. (2009) found that familismo was a buffer for behavior problems (e.g., aggressive behavior, conduct problems, and rule-breaking) in children. Since familismo includes the belief of respect in regards to authority figures (Stein et al., 2015) and behavior as a reflection of the family (Smokowski & Bacallao, 2007), it may be a component in these findings.

Familismo has also served as a way to uphold family unity and confront new challenges caused by post-immigration in a sample of Mexican immigrants (Smokowski & Bacallao, 2007). Familismo has served as a protective factor for both parents and their youth because both parents and their youth have demonstrated a decrease in depressive symptoms and in internalizing mental health symptoms, respectively (Ayón et al., 2010). Similarly, Piña-Watson et al. (2013) investigated the association between familismo and psychological functioning (e.g., self-esteem and life satisfaction) among Latinx adolescents, which resulted in a
positive association with *familismo* as a protective factor against bicultural stress. Whereas, Stein et al. (2015) found that while familismo did not reduce the experiences of stress, adolescents with high levels of familismo had a better sense of belonging to their school. Blanco (2017) demonstrated how familismo serves as a protective factor as it was significantly related to resilience among a sample of Mexican campesinos at Washington State University. Therefore, *familismo* is seen as a cultural asset within the Latinx population as presented through the findings of multiple studies.

Blanco (2017) also demonstrated a need to break from deficit-based thinking on campesinos. Instead of focusing on physiological risks or psychiatric disorders that prevail within the population, protective factors or forms of resiliency should be investigated. Thus, research that looks at mental health with an attuned cultural lens is ideal for the purpose to strengthen and support this population properly. The purpose of the current study is twofold. The first aim is to investigate how mental health is conceptualized among farmworker families or *familias campesinas* (i.e., seasonal farm workers). The second is to understand how *familismo* act as a protective factor to support the mental health of adolescents within the Latinx campesino population in California’s Central Valley.

**Methods**

**Participants**

The participants for this study will be recruited through convenience sampling with the assistance of a *mayordomo* (foreman) that is known to the researcher, as well as through the grassroots organization O.L.A Raza. The study aims to recruit about 15 to 20 *campesinos* from the Central Valley region and their adolescent children. It is estimated that the total sample size will be 30 to 40 participants. The study aims to have a balance between the participants where there is the same number of males and females *campesinos* in the sample.

**Design and Procedure**

The present study will be face-to-face ethnographic interviews. The necessary protocols provided by the Institutional Review Board (IRB) will be followed. After participants are recruited with the help of a mayordomo, they will be given thorough information about the project and the purpose of it through an informed consent. Protocols of informed consent forms will consist of information about procedures, benefits, and risks of participation, an explanation on how to obtain the results of the research, and contact information of the researchers as required by the IRB. Information about where and how to receive counseling services will also be given to participants. Participation in this project will be voluntary, however participants who agree to participate will receive an incentive of a $10 gift card as a token of appreciation for their time and effort in participating in the project.

Interviews will begin with basic demographic questions (e.g., age, sex, languages spoken, annual household income, education obtained, immigration status, time within the U.S., household size, healthcare insurance, and amount of time working in agricultural labor) prior to the initiation of an in-depth one-on-one interview. The location of the interviews will be held at the convenience of the participants. The data collected will be recorded via an iPad and will be discarded after transcribing the audio. Identification numbers will be given to participants to separate them from their names and maintain confidentiality. The data will be stored in a secured research lab with a mentor within the psychology department.

The interview protocol will be composed of a series of open-ended questions. This will allow participants to discuss their perceptions of mental health. Participants will be asked in their preferred language (English or Spanish) broad questions related to mental health and familismo. The following questions will be used to prompt discussion and gather data:

1. When you think about mental health, what do you think about?
2. Have you ever experienced instances of mental health issues?
3. Do you know anyone who has struggled or is struggling with mental health? If so, tell me about it?
4. Have you ever experienced mental health issues or know someone who has?
   a. What was your family’s reaction to your mental health symptoms or issues?
5. How has family help you or the people you know who have faced mental health issues cope with them?
6. Do you think that mental health problems or issues is the same as cancer, diabetes, or heart disease?

Analysis

Using a naturalistic approach, the data collected from the participants will be analyzed qualitatively. This study will be guided by a grounded theory methods (GTM) approach for the analyses of interview data (Charmaz, 2006; Glaser & Strauss, 1967). The qualitative data will be transcribed verbatim. The transcription software ATLAS.ti version 8 for Windows to code text files.

After the transcription process, the procedures of GTM for coding will be followed such as initial coding, in vivo, and focused coding will help in creating codes from the data. During initial coding, the transcripts will be broken into units of text to create a code. In vivo coding will be carried out similarly as initial coding from the participant’s own words as codes. Initial and in vivo coding will be assorted into more abstract categories with various indicators theoretically saturating each category (LaRossa, 2005).

Expected Results

Expected results will bring about a better understanding of ethno-specific or cultural terms that are culturally attuned to the campesino population. The responses of the participants will, hopefully, introduce different terms of conceptualization for mental health that are in a cultural context. The cultural value of familismo will hopefully be seen as a protective factor for the adolescents of farmworker families or familias campesinas. The adolescents in the study will perhaps express that familism has not been directly a protective factor due to the reactions of family members.

Discussion

The present study will create a better understanding of culturally specific terms that are used to conceptualize mental health among campesinos in the Central Valley. This will help to be culturally sensitive in the manner that studies are conducted with this population even to the extent of taking into consideration the terms in psychological testing and creation. Comprehending the campesino will benefit the population because it will shift away from Western notions of mental health and create a culturally attuned thinking of mental health. The data analysis of the adolescents of farmworker families will help to better help understand how families react to mental health and move forward to find mental health services.

References


Children of low-income immigrant families can face a multitude of risks as a result of compounding social adversities. Higher levels of risk have been shown to predict lower levels of self-regulation (Raver, 2004) and negative psychosocial outcomes, such as increases in problem behavior (Rutter, 1979). Self-regulation, defined as the ability to modulate one’s own emotional reactions to achieve a goal, develops rapidly in early childhood (Eisenberg & Spinrad, 2004). Early risk has been shown to affect emotion regulation (Raver, 2004), with self-regulation as being key in producing resilience (Buckner, Mezzacappa, & Beardslee. 2009). Specifically, self-regulation skills have been shown to mediate the risk of maladaptive social functioning in low-income youth through being better equipped to cope with stressful life events (Buckner et al., 2009). There is an extensive body of literature exploring the impact of low-income youth’s self-regulation skills on their social competence, but its relation in light of cumulative risk of immigrant and low-income status has yet to be explored across ethnic groups. Thus, this study seeks to understand the relationship between low-income immigrant children’s emotion-regulation skills, as measured through a delay of gratification task (Mischel, Ebbesen & Zeiss, 1972), and their social competence, measured through the Teachers’ Report on Social Skills Ratings Scale (Gresham & Elliott, 1990).

Self-Regulation and Social Competence

In normative samples, it has been shown that individual differences in self-regulation abilities are related to children’s social competence. Children who were rated high in effortful control abilities were observed to have greater socially competent responding than those who were rated low (Eisenberg, Spinrad, & Valiente. 2019). In low-income minority samples, standardized assessments of emotional self-regulation have demonstrated predictive validity (Raver, 2004), implying that such measures could also be used to determine its influence in related populations. Specifically, on delay of gratification tasks, children of low-income families have been shown to perform worse (Evans, 2004), and emotional dysregulation has predicted lower social competence before school entry in a low-income racially diverse population (Chang, Shelleby, Cheong & Shaw, 2012). Because self-regulation has been shown to influence social competence in early childhood, and social functioning in early years has been shown to predict socioemotional adjustment in later childhood (Neumann, Van Lier, Gratz, & Koot, 2010), and adolescence (Burt, Obradavoic, Long, & Masten, 2008), it is critical that these variations across psychosocial measures within this relationship be explored in low-income immigrant populations to promote their long-term socioemotional well-being.

Social Competence has important implications for children’s development as it not only measures social functioning, but it is also linked to better academic skills (Liew, 2011; Raver et al., 2011). In immigrant populations, specifically for a cohort of Chinese immigrant children, effortful control was positively associated with higher math and literacy skills (Chen et al., 2015). For children in poverty, emotional self-regulation has been identified as a mediator in moderating the effects of environmental risk and the development of behavioral problems (Raver, 2004). Environmental contexts of development affect self-regulation and school readiness. Poverty and risk alters children’s stress physiology, which affects brain regions that are related to self-regulation abilities. While early adversity has been shown to shape self-regulation systems to cope with unfavorable conditions, it has not been shown to adapt to the demands of school (Blair & Raver, 2015).

Specific Aims

This study seeks to explore the relationship between self-regulation, as measured in a version of Mischel’s classic delay of gratification task (Mischel et al., 1972), and social competence, measured through the teacher’s version of The Social Skills Rating
(SSRS; Gresham & Elliot, 1990), in a low-income immigrant preschool population. The little literature exploring this relationship in children of immigrants focuses on specific ethnic groups (Chen et al., 2015; Li-Grining, 2012), but little is known about how self-regulation is situated in sociocultural contexts across ethnic groups, particularly within a low-income population. Thus, this study seeks to see if self-regulation moderates social competence scores across diverse identities and its variations that exist across immigrant-group affiliation. It is expected that children who are unable to delay gratification, and thus are lower in self-regulation, will have lower social competency scores in comparison to the children who delay gratification. Findings have important implications for informing early interventions supporting life-long social and academic resilience in vulnerable low-income minority populations.

**Methods**

**Participants**

Participants will be 80 preschool low-income four-year old first-generation children (40 girls and 40 boys), recruited from three different predominantly low-income immigrant Head Start-affiliated preschool classrooms in Manhattan, Queens, and Brooklyn, and the Bronx all within the first month of the school year. Children will be recruited through in-school flyers and posters and email lists. The study aims to recruit 20 low-income immigrant children having origins in Spanish-speaking countries, 20 from East Asian nations, 20 from African nations, and 20 from South and Western Asian nations. Their respective preschool teachers will also be recruited to assess the students’ social competence.

**Procedure**

Researchers will provide a letter of support to the Head Start corporate office granting schools permission for access to conduct the study. After receiving confirmation of support, the proposal will be submitted to the respective institution’s Institutional Review Board (IRB) for approval to begin data collection. Then, parental consent will be obtained from all participants for both self-regulation and teacher social-competence ratings scales to be administered to their children. An initial demographics questionnaire will be administered to the parents that includes questions pertaining to income, minority/immigrant group-affiliation, parents’ educational background, and cultural values as it relates to discipline and self-control. For the self-regulation delay of gratification task, child assent will be asked prior to administration. For the social competence assessment, teacher consent will be obtained from the respective classrooms.

**Self-regulation.** Self-regulation will be measured through a single-time, delay of gratification task (Mischel et al., 1972), in which the researcher will escort each child individually, to a private room devoid of toys/activities in their school. The researcher will first display a small, clear box of prizes, alongside a bell, and explain that he/she can choose one prize to take home. After introducing the objects, the researcher will then explain to the child that she/he must leave the room, and that, if the child can wait until the researcher comes back, he/she can take home two prizes. If the child does not want to wait, he/she can ring the bell and the experimenter will return to open the box, but that, if the child chooses this option, the child will only be able to take home one prize. A camera will be set up and children’s behavior will be coded for ability to delay gratification.

**Social competence.** On the same day, after school-hours, social competence will be evaluated using the SSRS (Gresham & Elliot, 1990) teacher’s questionnaire form. The SSRS focuses on three measurements: social skills, problem behaviors, and academic competence. The social skill scale consists of five sub-scales: cooperation, assertion, responsibility, empathy, and self-control. The problem behaviors scale includes externalizing problems, internalizing problems, and hyperactivity. Each item is rated by frequency, defined as the degree to which the particular issue occurs, and importance, or how pertinent the issue is to the particular child’s social behaviors. A research assistant will administer the SSRS to the three preschool teachers of the program for each child being assessed. The task will take approximately 25 minutes to administer. Each participating teaches will be compensated via $10 Amazon gift cards for his/her time.

**Data Analysis**

Initial descriptive statistics will be run to describe the population that will be observed. Using these descriptive statistics, multiple regression analysis will be used to test the hypotheses for a moderator effect. SPSS (SPSS Version 25) will be used to run analyses. Children’s behavior on the delay of gratification task will be observed for ability to delay gratification using DataView (DataView Version 7.01) software.
**Results**

Based on previous literature on low-income children, it is expected that children’s self-regulation abilities, as measured through the delay of gratification task (Mischel et al., 1972), will moderate the potential behavioral and environmental risks associated with being in poverty (Raver, 2004). It is expected that within the study’s low-income population, results will vary across cultural dimensions, although, from lack of previous literature, specific variations are unknown. However, it is known that the degree to which a child can self-regulate is positively related to how social competent he/she is (Eisenberg et al., 2019). Thus, it is expected that children from cultures that value discipline and self-regulation will be more socially competent than their less disciplined peers. From previous literature on low-income children who were rated low on self-regulation measures (Chang et al., 2012), it is expected that these children will consequently be rated low on social competence.

**Discussion**

Results from this study will have important implications for teachers, parents, and education policy-makers alike. This will be the first published study exploring the relationship between self-regulation and social competence in a low-income immigrant population across multiple ethnic groups. Doing so will provide insight into how to best prepare these children, who face cumulative risk from their compounding societally disadvantaged identities, for social competence and academic success.

It is important to note some limitations derived from the study paradigm. First, the sample size is relatively small, and located in schools within school organization, making results hard to generalize across geographically and educationally diverse populations. The experimental design is also not random, which puts the paradigm at risk to experimenter and inferential bias. Additionally, the teachers’ report on the SSRS (Gresham & Elliott, 1990) is subject to teacher’s own biases, and may not be sufficient or an accurate reflection of the children’s social competence capabilities. Findings from this study can be used to develop measures of self-regulation and social competence specifically for low-income immigrant children, as well as evaluate self-regulation as a moderator for other outcomes, such as academic success, in these populations. Future directions in research should provide longitudinal follow-ups of similar population to evaluate self-regulation as a potential moderator for social competence, and then later, to academic success across development.

**References**


Liew, J. (2011). Effortful Control, Executive Functions, and Education: Bringing Self-Regulatory and Social-Emotional Competencies to the Table. Child Development Perspectives, 6(2), 105-111.


In the fall of 2014, New York City’s Department of Education began the rollout of Pre-K For All, an education initiative spearheaded by Mayor Bill de Blasio. In AY 2015-2016, nearly 69,000 children were registered to attend free, full-day, high-quality pre-K. Directed by Pamela Morris, and Elise Cappella, the different research projects aim to provide city leaders involved in the roll-out with data that facilitates decision-making regarding the expansion of new pre-K seats and the quality of instruction in pre-K. Using existing data sources as well as newly collected data, we inform city leaders on topics such as children’s academic achievement at pre-K entry and pre-K exit, classroom quality, and teacher’s professional development.

https://research.steinhardt.nyu.edu/ihdsc/nyupk
How Teacher Emotional Support Influences Student’s Academic Achievement: The Mediating Role of Social Development

Sophia Nguyen

Regardless of the amount of education a person receives throughout their lives, multiple studies have demonstrated that prekindergarten (pre-K) is one of the most salient markers of education during early childhood development for it’s consistent positive long- and short-term effects (Yoshikawa, Weiland, & Brooks-Gunn, 2016). Pre-K is ultimately the foundational year for early development as it can potentially impact one’s development beyond one’s fundamental skills to adulthood (Yoshikawa, Weiland, & Brooks-Gunn, 2016). Prior studies have suggested that even one-year attendance of pre-K can have cognitive impacts representing an additional three months of education above the normal skills of young children that do not have access to pre-K (Leak et al., 2012). Not only is attending pre-K influential to early childhood development, but a higher quality program can produce even larger effects as well (Phillips, Gormley, & Lowenstein, 2009).

Within the quality of pre-K education, emotional support is an important factor that presents a strong key for early childhood education before age five. Emotional support in an academic environment consists of supported efforts provided by teachers to facilitate a positive teacher-student and student-student interaction (Downer, Sabol, & Hamre, 2010). In practice, emotional support is heavily conceptualized from an attachment and self-determination theory that promotes a sense of security, exploration, and connectedness between teachers and students (Bowlby, 1969; Connell & Wellborn, 1991). Emotional support is an important key to recognize in this study as it can foster a welcoming learning atmosphere, promote relationships, recognize each student individually, and providing opportunities for students to become independent (Downer et al., 2010). The Classroom Assessment Scoring System (CLASS) framework is critical to this research as it is a common metric used to describe the complex aspect of emotional support (Pianta, La Paro, & Hamre, 2008). As a subscale of CLASS, emotional support is a domain that analyzes both student’s emotional and social functioning in the classroom within an empirical theory (Hamre & Pianta, 2007). The CLASS framework serves as a pathway to analyze complex processes in the classroom setting, including the relationships and interactions that are shared among teachers and students daily (Bronfenbrenner & Morris, 1998). The emotional support domain then deposits specific dimensions that include classroom climate, teacher sensitivity, and regard for student perspectives (Pianta et al., 2008).

Furthermore, previous supporting evidence indicates that there is a significance between emotional support to young children’s academic outcomes; especially for children at-risk (Hamre & Pianta, 2007). Teachers that provide high levels of emotional support in their classroom serve an important environment to nourish their children's early academic competence (Morrison & Connor, 2002). A classroom with high levels of emotional support is child-centered, learning-focused through positive climate and has teacher sensitivity and warmth (La Paro, Pianta, & Stuhlman, 2004). In a study of young students in fourteen first-grade classrooms, the results presented that classrooms with more emotional support predicted a higher level of academic achievement across the reading and mathematics domains (Perry, Kaufmann, & Knitzer, 2007). These studies presented above support the notion that emotional support is influential to early childhood development. Mashburn et al. (2008) found that classrooms with higher emotional quality interactions were associated with teachers’ ratings of higher levels of social competence and lower problematic behaviors. Altogether, the evidence indicates that a high emotional classroom is critical to early childhood learning as it can assist the child to navigate through their surroundings - both academically and socially.

Present Study

The research question driving this study is to what extent does social development mediate the relationship between emotional support and academic achievement? It is hypothesized that pre-K emotional support will be associated with their academic achievement in later elementary
school. It is expected that social development will mediate the relationship between emotional support and academic achievement.

Method

Participants

As a large-scale study, 2,400 participants will be recruited through the NYU-NYC DOE Pre-K for All study across 120 school sites. Children who are eligible for the study must be enrolled in the Pre-K for All program elementary school programs and classroom located in New York City. Our study plans to directly collect data of students from teacher reports. Through teacher reports, there will be survey information about participating students’ functioning and behavior in the classroom context. Professionally trained facilitators will also be sent to observe classroom practices and document the levels of teacher-student interactions.

Teachers of the classroom will send recruitment packets home for all of their students. The packets will include a description of the study, consent form, family contact information, child pair recruitment form, and a brief demographic survey. Parents can choose to return the recruitment packets once they have determined their participation of their child. To be an eligible child for the study, the child must be in a primary English instruction classroom and planning to stay within the school program for the following five years of elementary school.

Measures

Emotional Support. The CLASS (Pianta et al., 2008) metric will be used in this study to measure the levels of emotional support in the classroom. The CLASS framework asserts three primary domains of classroom quality shared among the students and teachers highlight students’ learning and promote social development (Pianta et al., 2008). Within the measurement of CLASS, emotional support is one of the three domains that will be analyzed in this study. This domain contains the specific scales of classroom climate, regard for students’ perspectives, and teacher sensitivity. Trained raters of the classroom will then record their experience on a scale of one to seven, with ratings of one to two being low, three to five being mid, and six to seven being high on emotional support (Pianta et al., 2008).

Social Development. Teachers in this study will partake in direct assessments of their child’s social skills and development. A Teacher-Child Rating Scale (TCRS; Hightower, 1986) will be used to measure students’ social competence and arising problematic behaviors. With 38 items in the measurement, the TCRS includes a 5-point scale that teachers will use to indicate how closely the statement describes their student. The items included in this scale measures on seven factor subscales that includes conduct problems, learning problems, anxious problems, frustration tolerance, peer sociability, work habits, and assertive social skills (Hamre & Pianta, 2007).

Academic Achievement. As a nationally recognized academic measurement, the Woodcock-Johnson III will be used to take direct information of students’ mathematical, cognitive, and literal performance (Woodcock, McGrew, & Mather, 2001). Scores for the Woodcock-Johnson III will be standardized for each child’s age and grade. Items measured in this test range from ordinary basic tests such as telling time to additional mathematical operations like addition and subtraction.

Time Wave. As a longitudinal, cross-method study, the data collection will be reported through multiple time waves following the participating students. Emotional support will be collected by trained raters once in the fall of pre-K. Ratings of emotional support will consist of classroom and teacher-child observations followed with ratings afterwards. To minimize the potential of data variability, children’s social development and academic achievement will be reported at every time wave. Teachers of the participating child will fill out reports of that child’s social skills from pre-K to fifth grade. Academic assessment of the child will also be collected at every time wave through the Woodcock-Johnson III Test of Achievement Applied Problems.

Results

Based on the previous research of emotional support, social development, and academic achievement. It is anticipated that the mediator social development will have a direct influence on emotional support and academic achievements for students across all grades in elementary school. A prior study has found that emotional support received from teachers to students played an important role in predicting student’s social development and academic competence (Malecki & Demaray, 2003). Building on that, it is expected that social development will be a direct variable that explains the relationship between emotional support and academic achievement. As the level of emotional support increases, it will further foster
student’s social development, and directly impact their academic achievement in the long run.

**Discussion**

Evidence from previous studies has shown that there is a significant correlation between children’s emotional and social functioning. Specifically, children higher on social competence are more likely to develop positive relationships with teachers (Pianta, La Paro, Payne, Cox, & Bradley, 2002). Although the studies referenced earlier presented a relationship between pre-K quality and cognitive impacts, it is unclear to what degree the measure of emotional support can significantly predict the children’s academic competence and development across the span of elementary school. I hope to analyze the mediation of social development in the classroom to student’s emotional support and academic achievement from pre-K up to fifth grade. Additionally, I will analyze the lasting effects of emotional support in pre-K focused on the social development of the child and their academic achievement. Looking at social development as a mediator between emotional support and academic achievement may be especially helpful in this study for children who are academically at risk and not matched accordingly to the demands of the classroom.

**Limitations & Future Suggestions**

Although the current study aims to examine the mediating role of social development between the relationship of emotional support and academic achievement, it does not necessarily imply causation between the variables. It is impossible to concretely state that level of social development directly predicts academic achievement or emotional support. Future research should facilitate a longer examination of these variables from pre-K to high school to see different patterns and developmental trends.

**References**


Currently, in the United States, the second most common family arrangement is children living with a single mother (United States Census Bureau, 2016). Liang, Berger, and Brand (2019) found that the majority of a study sample of single moms were of young children, who experienced higher rates of depression, general stress, and parenting stress, in comparison to partnered mothers as well as single mothers with older children. Prior research has shown that high-stress levels can play a causal role in depression in mothers (Willner & Goldstein, 2001). Maternal stress effects overall well-being which additionally affects the well-being of children in the community.

Stress can reflect social status, major life events, and everyday chronic stressors that contribute to physiological changes in the body and disease when in overload (McEwen, 2012). Chronic stressors often accumulate for single mothers particularly, related to housing and financial insecurity, and poor social support systems (Manuel, Martinson, Bledsoe-Mansori, & Bellamy, 2012). A study by Krauss (1993) found that social support can mediate maternal stress levels significantly. Recent research findings suggest that since single mothers are predisposed to higher rates of mental illness due to stress and adversity, there should be social support programs implemented to limit future disparities (Liang et al., 2019).

Social support has been defined in the literature as a complex construct which includes instrumental and tangible aid, access to resources, as well as emotional support (Dunst, Trivette, & Cross, 1986). Research on social support theory provides evidence that tangible support in the form of quality childcare is a common need expressed by single mothers (Campbell-Grossman, Hudson, Keating-Lefler, & Fleck, 2005). Universal Pre-K (UPK) For All provides government-funded early childhood education for all four-year-olds in the five boroughs of New York City (NYC). UPK has the potential to be an innovative source of instrumental support for mothers and families with young children. Research by Cairney, Boyle, Offord, and Racine (2003) found social support to have a moderate impact on the link between the family system and maternal well-being. Subsequently, Manuel et al. (2012) revealed a direct relationship between social support and mental health, however, there was a lack of evidence in support of the supposed protective factors linked with social support. Research from Boyd (2002) found that the absence of social support and low perception of support were strong predictors of depression and anxiety in mothers. Additionally, a recent study of mothers in Scotland revealed that over fifty percent of higher parental stress in high and low educated moms is related to deficits in social support (Parkes, Sweeting, & Wight, 2015). Alternatively, it is possible that social support programs, in the form of childcare such as UPK, would have larger long term impacts seen when studied over time. A follow-up study of an Early Head Start (EHS) project found delayed impacts on maternal depression approximately two years after a child’s attendance in the program (Chazan-Cohen et al., 2007). Results from Chazan-Cohen et al. (2007) suggest that the implications of childcare social support interventions may be impactful for the mental health of parents and children in the long term.

Ultimately, the inconclusive findings from varied studies indicate a need to establish a stronger link between instrumental social support and improved maternal stress levels. More research is needed to establish a firm direct link between maternal well-being and social support programs, specifically with regard to government-funded Pre-K. The current aim of this study is to explore the association between UPK participation and maternal stress levels. Additionally, to examine instrumental social support as a mediator of stress levels in single mothers in the five boroughs of NYC.

**Methods**

**Participants**

The participants of the study will be 250 single mothers residing in the five boroughs of NYC, with at least one child starting UPK for the first time. To
be eligible for the study the mothers must meet the following criteria: be between the ages of 18-45 years old and living in one of the five boroughs of NYC (e.g., Staten Island, Manhattan, Bronx, Queens, and Brooklyn). Having at least one child enrolled in UPK for the duration of the study. Mothers will be of mixed-income, diverse ethnic backgrounds, with varying levels of education. It is important for the study to draw from a random sample of mothers of mixed socioeconomic status (SES). To meet the criteria of single mom they must be unpartnered. As defined by the Population Reference Bureau (2010), single mother households are female-headed homes with no spouse present, living with one or more unmarried children under the age of 18. For the purposes of this study unpartnered will refer to not having a spouse or cohabitating partner in the home raising the children with them. While some mothers may technically be married they will still qualify for the study if they are separated (e.g., estranged from spouse or father), and will be considered unpartnered single moms. The mothers will be grouped within the study by numbers of children and ages of children.

Study Design
The study will employ a mixed-method, non-experimental design of qualitative and quantitative research. The independent variable in the study will be UPK participation. The dependent variable will be the stress levels of single mothers. The mediator will be formal social support, in the form of government-funded childcare (UPK). The study will be both descriptive and exploratory in nature as it examines how UPK participation impacts the stress levels of single mothers.

Measures
The study will collect preliminary demographic information from all the participants, related to levels of education, race and ethnicities, income brackets, and family living situations in addition to various measures, which are outlined below.

Parental Stress Scale (PSS). The study will utilize the Parental Stress Scale (PSS), an 18-item self-report scale designed to measure stress levels specifically related to parenting (Berry & Jones, 1995). The PSS utilizes a 5-point rating (e.g., 1 = Strongly Disagree to 5 = strongly agree). The questions range on possible stressful emotions related to parenting such as. “Having child(ren) leaves little time and flexibility in my life;” and “The major source of stress in my life is my child(ren),” and also “I am happy in my role as a parent.”

Family Support Scale (FSS). Additionally, the study will utilize the Family Support Scale (FSS; Dunst, 1984). The 18-item self-report scale measures families perceived support from formal and informal sources of social support by ranking levels of help. The FSS is a 5-point Likert scale which measures sources of support from: 0 = not available; 1 = not at all helpful; 2 = sometimes helpful; 3 = generally helpful; 4 = very helpful; and 5 = extremely helpful (Dunst, 1984).

Finally, the study will employ the use of focus group style interviews with small groups of participants at various throughout the study to discuss their individual coping strategies with regards to parenting and social support sources. The focus groups will be led by trained researchers and assistants, and then coded and transcribed to get a more complete qualitative understanding of the participants’ experience of stress related to parenting and formal social support. Particularly, the focus groups will center around the mothers’ experiences with having children in UPK, and how they may have impacted their perceptions of parental stress and social support.

Procedure
The study will recruit new parents enrolling child(ren) on the Pre-K application through the NYC Department of Education, with a box asking parents if they are open to being contacted about their experiences related to UPK in an upcoming study. Responses to fliers and application leads will result in follow-up phone screenings to inform the relevant details of the study and get consent for participation in the study. Once participants are screened and consent is obtained, they will be sent a packet of self-report measures to be completed and returned prior to the start of their child’s first year in UPK. The packets will contain the PSS and the FSS, as well as a survey about demographic and household information. At the end of the school year, the second wave of packets will be distributed with the two scale instruments sans the demographic-household survey.

Additionally, towards the end of the school year, the participants may elect to participate in focus groups. The focus groups, while optional, will be recommended to parents as a form of debriefing in a supportive, shared group setting. The focus group interviews will gather more in-depth qualitative data to analyze and report group feedback. The
The goal of the focus group interviews are to capture and better understand the range of experiences single moms report related to Pre-K and maternal stress. It is important that the study has a wide pool of participants to represent different backgrounds. It is also expected that participation and responses may decline during the length of the study so recruiting large numbers of participants initially is crucial to maintain a decent sample size throughout the duration of the study. To plan for potential dropout, we will have incentives for paid research of $100 per person paid at completion of the study. Participants that returned the pre-test surveys but not the post-test surveys will not be included in the overall average of scores in the finalized data of the study.

Results

It is expected that there will be an association between maternal stress levels and Pre-K participation. The expectation is that prior to Pre-K enrollment and start of the school year, maternal stress levels will be higher on average than compared to stress levels recorded towards the end of the Pre-K year. The additional expectation is that perceptions of social support will increase after the Pre-K enrollment and be higher at the post test towards the end of the school year. The prediction is that there will be a negative correlation between maternal stress levels and perception of social support, such that as perceived social support by Pre-K participation increases, maternal stress levels are expected to decrease. Overall, some fluctuation in the results is expected, particularly with regard to single mothers of different demographic backgrounds. The goal is to capture these fluctuations and explore them deeply in the focus group interviews, which is qualitative in nature.

Discussion

It is expected that the study and results may experience declining responses in self-report surveys throughout the duration of the study. Considering that the study requires pre- and post-tests over the span of a year, the sample size may decrease by the end of the study. Another expected limitation is related to the status of single-mother, as participants’ living and family arrangements may change in the duration of the study and this may impact the study sample. The sample size of the study will also be small and may not reflect experience related to preschool participation of all single mothers across the country. It is important to note that this is a preliminary study, and would contribute to expanding research on the impacts Pre-K programs have on the family structure, and experiences of single-mothers. Future studies should also consider the role of Pre-K quality and how that may be potentially moderate maternal stress throughout child participation.

This study would contribute valuable qualitative and quantitative research to the field of applied psychology. At a time when universal Pre-K has national attention it is crucial for policy makers to have research that documents important beneficial impacts of the program in communities such as NYC. Particularly this study would highlight the ways in which Pre-K for all potentially impacts mothers of preschoolers’ stress levels, and hopefully translates to improved maternal well-being. Additionally, the study would explore the varied experiences of single-mothers navigating the new Pre-K for all program. In particular, this study would assist policymakers and researchers interested in further exploring the impacts and differences of experience related to the expansion of government funded Pre-K on family structures existing within communities.

References


FACES

Families and Children Experiencing Success
PI: Anil Chacko
Mentor: Tori Dahl

FACES is directed by Anil Chacko. The lab was developed to serve the families of youth exhibiting disruptive behavior disorders such as Attention-Deficit/Hyperactivity Disorder, Oppositional-Defiant Disorder, and other conduct disorders. Its research aims to understand how to develop the most effective prevention, intervention, and service models for youth with disruptive behavior disorders and related conditions, or those at high risk for developing them.

https://steinhardt.nyu.edu/apppsych/faceslab
The Efficacy of Mindfulness-based Parenting Training (MBPT) in Reducing Behavioral and Distruptive Problems among Ethnic Minority Children

Hing Wìng (Florence) Tse

Attention Deficit Hyperactivity Disorder (ADHD), Oppositional Defiant Disorder (ODD), and Conduct Disorder (CD) are considered as three of the most prevalent disruptive behavior disorders (DBD) among children and adolescents, affecting individuals from diverse racial/ethnic backgrounds, including White (9.8%), Black (8.7%), Mexican-American children (6%), and children from other groups (5.2%) in the United States (Siegel, Laska, Wandering, Hernandez, & Levenson, 2015). While behavioral parent training (BPT) has been empirically demonstrated to be effective in reducing behavioral and disruptive problems in children (Kazdin, 1997; Lundahl, Risser, & Lovejoy, 2006), some families were found to engage in automatic patterns of interactions, which have made them become reluctant to change their ways in response to their children’s behaviors (Serketich & Dumas, 1996). In light of this limitation, a growing literature indicates that mindfulness-based parenting training (MBPT) may be a promising intervention to enhance parental engagement that is associated with more desirable treatment outcomes of children’s problem behaviors (Dumas, 2005).

Mindfulness is an intervention characterized by the use of eastern meditation techniques to encourage careful contemplation and empathetic attention which helps interrupt automatic responding (Kabat-Zinn, 2003). There are three ways of fostering everyday mindfulness in parenting, including: (1) facilitative listening, which encourages parents to share their experiences and thoughts to their children; (2) distancing, which refers to a strategy for parents to space themselves out from the negative emotions; and (3) motivated action plans (MAPs), which help parents establish effective goals for themselves and their children, and hence develop specific plans to reach these goals (Dumas, 2005). Research has found that mindfulness promotes parents’ nonjudgmental reactions to their children’s disruptive behaviors, rather than engage in habitual, yet ineffective responses (Townshend, Jordan, Stephenson, & Tsey, 2016).

While a growing body of research indicates the effectiveness of MBPT for children and adolescents with behavioral problems and their parents, many of these studies were conducted with White populations (e.g., Bögels, Hoogstad, van Dun, de Schutter, & Restifo, 2008; Coatsworth, Duncan, Greenberg, & Nix, 2010; Duncan, 2007; Van de Weijer-Bergsma, Formsma, de Bruin, & Bögels, 2012). Little is known about how MBPT impacts ethnic minority families in order to reduce their children’s disruptive behaviors. In addition, prior research (Butler, Lee, & Gross, 2007; Soto, Perez, Kim, Lee, & Minnick, 2011) suggests that mindfulness training may be a useful intervention for ethnic minorities due to their cultural tendency of being more aware of and accepting their own emotions. For instance, ethnic minorities, such as individuals of Asian and Latino origin, are more likely to use expressive suppression and rumination strategies to regulate their emotions, compared with European Americans (Gross & John, 2003). Yet, studies have not empirically tested the effectiveness of mindfulness-based interventions with diverse families.

Filling the gap of the current literature, this paper seeks to use an empirical approach to understand how MBPT unfolds with ethnic minority families and their children with ADHD. More specifically, this study will look at whether the frequency with which parents make use of the mindful parenting strategies (i.e., facilitative listening, distancing, and MAPs) mediates the effectiveness of the intervention on treatment outcomes. The second aim of this paper is to examine the moderating effects of ethnicity on the relationship between the frequency of strategy use and the changes seen in parent and child treatment outcomes. For instance, are there ethnic differences in utilizing the mindful parenting strategies (i.e., do East Asian families employ the strategies more frequently than African American families?)

For this study, it is predicted that due to the mindful practices learned in the MBPT intervention, parents in the MBPT group will show greater improvements in interacting with their disruptive children than
those in the BPT only group. For the second research question, given the limited research investigating how different ethnicities engage in and benefit from mindfulness-based practices, hypotheses were unable to be formed at this time, thus it will be an exploratory topic instead.

**Method**

**Participants**

A total of 76 families will be recruited from the greater New York area. This sample will consist of 22 non-Hispanic White, 20 Asian, 16 Hispanic/Latino, 14 Black/African American, and 4 multiracial families. The sample will also be expected to comprise approximately an equal number of boys and girls, with a mean age of about 10 years old.

**Procedures and Design**

Families will be recruited from five elementary schools across three districts, through presentations in classrooms and at school events, local advertising in newspaper and radio, and direct phone calls to families’ homes. Qualified families will be stratified by race/ethnicity and randomly assigned to one of two conditions: 38 families will be assigned to the original behavioral parent training (BPT) interventions, which also serves as a control condition; and 38 families will be assigned to the mindfulness-based adaptation of the BPT program (MBPT). Due to the small sample size, a stratified random design will be employed to balance the groups for the purpose of controlling variables that might influence outcomes (Stout, Wirtz, Carbonari, & Del Boca, 1994).

**Mindful Parenting and BPT.** The program will primarily follow the manual, Mindful Parenting: A Guide for Mental Health Practitioners (Bögels & Restifo, 2013), consisting of 8-weekly, 2.5-hour group sessions, with 8 to 14 parents in each group. The group sessions will be co-led by two doctoral students in clinical psychology who have also received formal mindfulness training. In the program, families will receive didactic information on mindfulness parenting strategies, as well as practice exercises and group interactive activities to facilitate their learning, in addition to all forms of meditation practices such as mindfulness of breath, thoughts, and emotions; mindful walking; and yoga. Parents are also encouraged to practice the mindful strategies at home or in between sessions.

In the BPT program (i.e., control condition), the format, including length, timing, session number, and family components, will be identical to the mindfulness intervention group. However, the BPT group sessions will focus more on helping parents solve difficult conflicts arise in real-life situations through setting goals and developing plans.

**Measures**

This study will be comprised of an assessment battery that entails three measures to evaluate parents’ use of parenting strategies and the of MBPT in improving child behavior, including: (1) Five Facet Mindfulness Questionnaire; (2) Child Management Practices; and (3) The Child Behavior Checklist for Ages 6-18.

**Five Facet Mindfulness Questionnaire.** The Five Facet Mindfulness Questionnaire (FFMQ; Baer et al., 2008) consists of 39 items to evaluate parents’ five component skills: observing, describing, acting with awareness, nonjudging of inner experience, and nonreactivity to inner experience. The scale is ranged from 1 (never or very rarely true) to 5 (very often or always true) and includes items, for example, “I am easily distracted” and “I disapprove of myself when I have irrational ideas.”

**Child Management Practices.** Child Management Practices (Redmond, Spoth, Shin, & Lepper, 1999; Spoth, Redmond, Shin, & Azevedo, 2004) include a set of scales that are used to assess mother’s discipline consistency, monitoring, rules communication, and inductive reasoning, which also serve as indicators of child management practices. Items (e.g., “How often do you know who your child is with when he or she is away from home?” and “How often do you give reasons to this child for your decisions?”) from all of these scales are rated on 5-point Likert-type response options, where 1 means “never” and 5 means “almost always.”

**The Child Behavior Checklist for Ages 6-18.** The Child Behavior Checklist for Ages 6-18 (CBCL/6-18; Nakamura, Ebesutani, Bernstein, & Chorpita, 2009) examines all six DSM-oriented scales (i.e., Affective, Anxiety, Somatic, Attention-Deficit/Hyperactivity, Oppositional, and Conduct Scales) of children and adolescents. All items (e.g., “Args a lot” and “Not liked by other kids”) are rated using a 3-point Likert-type scale to indicate how often the specified events occurred in the past 6 months, 0 (not true) to 2 (very true or often true).

**Observational Coding.** Observational assessment (i.e., five brief tasks in analog laboratory settings) will be videotaped for the purpose of objectively
examining the frequency of use of mindful parenting strategies in each family. Each 40-minute observational session will be separated into 80 intervals that are 30 seconds in length. Three mindful parenting strategies will be coded using a 2-point metrics (1 = Yes, 0 = No). Five coders will be trained and required to complete 20 “gold standard” segments in which they correctly code 80% of them prior to independent coding.

**Planned analysis**

To assess whether the MBPT had an indirect effect on parent and child behavior and whether the frequency of use of mindful parenting strategies serves as the mediating mechanism, the SPSS software (IBM Corp, 2017) and a multiple regression analysis will be utilized to perform the tests that examine the joint significance of two parameter estimates. To examine the moderating effects of ethnicity on treatment outcomes, mixed-model ANOVAs will be employed with ethnicity and treatment as between-subjects variables and frequency of strategy use as a within-subjects variables.

**Results**

**Mediation Analyses**

It is expected that MBPT’s effects on treatment outcomes operate through changes in the frequency of use of mindful parenting strategies. In contrast, the direct effect of MBPT on reducing children’s behavioral and disruptive problems will not be statistically significant. The prediction is based on Jones et al.’s (2010) study which treatment engagement in ethnic minority families were observed to improve after they received the interventions and recognized the mindful parenting strategies.

**Moderation Analyses**

Marginally significant effects of ethnicity are predicted for the use of facilitative listening based on the finding of prior study (Fung, Guo, Jin, Bear, & Lau, 2016), in which the mindfulness program was found to be effective in reducing the expression suppression in ethnic minorities by encouraging them to be more aware of and accepting their emotions. Yet, no statistical significance will be expected in the use of other mindful strategies including distancing and MAPs, which may emphasize cognitive restructuring more, as Fung et al. (2016) did not find a significant association between mindfulness training and cognitive reappraisal.

A set of post hoc tests comparing the different racial/ethnic groups will be conducted for further examination of the effects. Parents of East Asian American and Latino children are expected to engage in facilitative listening more frequently than parents of White children and African American children, as individuals of Asian and Latino descents are found to be more likely practicing expressive suppression in regulating their emotions (Gross & John, 2003).

**Discussion**

This study compares MBPT to the original version of the intervention (i.e., BPT) to examine the effectiveness of mindful parenting strategies on reducing children’s behavioral and disruptive problems. The expected findings will contribute to and extend the current literature where only a handful of empirical studies (e.g., Jones et al., 2010) have evaluated the efficacy of mindful parenting programs delivered to ethnic minority families of children with disruptive behaviors.

The second aim of this paper is to examine the moderating effects of ethnicity on the relationship between the frequency of strategy use and parent and child behavior. No statistically significant differences are expected to be found between different racial/ethnic groups in utilizing mindful parenting strategies. However, parents of Asian American children and Latino children are expected to be marginally significantly more likely to engage in facilitative listening than those of White children and African American children, which may reveal their enhanced ability to recognize and accept their emotions. This may be consistent with prior work (Fung et al., 2016) which indicate the effect of mindfulness program in helping ethnic minority children in school settings to reduce emotion suppression behaviors but not change their automatic thoughts to an event.

Several limitations of this study should be noted. The generalizability of the findings to other contexts and samples is restricted due to our relatively small sample size. Future research is needed to examine the effectiveness of mindful parenting program with a larger and more diverse sample size. Another prominent limitation is that this study does not examine whether the ethnic minority families who receive the intervention have
been practicing certain extent of mindful parenting, as prior research (Hanh, 1995) shows that mindfulness strategies such as facilitative listening emphasizes deliberating and seeking solutions to address problems, are more consistent with diverse cultures' practices. It would be helpful for future research to explore how parents' pre-mindfulness could impact their parental engagement in the intervention that is associated with the treatment outcomes of children's problem behaviors.

In spite of these limitation, this is one of the few empirical studies in the literature to examine the efficacy of mindfulness-based parenting intervention among ethnic minority families.

References


The literature in regards to understanding Autism Spectrum Disorders (ASDs) has come a long way in the past few decades. ASDs are a set of developmental disorders that spread over a large spectrum with characterized deficits in areas such as social behavior, language development, mimicry, and playing skills (Myers & Johnson, 2007). As a result of these deficits in their development, children with ASD often struggle in school, both in their academics and in their social relationships. This imposes a burden on educators that may not be trained properly in teaching techniques meant to engage children with ASD (Myers & Johnson, 2007, Koegel, Matos-Freden, Lang, & Koegel, 2012). While the interventions necessary to improve disruptive behaviors and academic performance can be generalized, not every child responds to these interventions similarly, which adds a difficult expectation for educators to know how to interact with each of their students. The answer may come in teaching parents the necessary skills. Studies show that disruptive behaviors in children with ASD decrease while increasing their compliance behavior when parents are trained in a Mindfulness-Based Positive Behavior Support curriculum (Ferraioli & Harris, 2013).

Mindful parent training has been shown to significantly reduce problem behaviors in children with disruptive behavior disorders (DBDs) as well as ASDs (Ferraioli & Harris, 2013; Singh et al., 2011). Mindfulness is a meditative practice method in which both situations and life as a whole are reperceived into a moment to moment basis (Shapiro, Carlson, Astin, & Freedman, 2006). The introduction of mindful practices has shown a significant decrease in aggressive and non-compliant behavior in children on the spectrum. The research also shows that not only does mindful parenting help the child’s behavior and compliance, it is also effective in reducing parental stress, increasing their satisfaction with their parenting, and their interactions with their children (Singh et al., 2011; 2014).

Another important and widely used form of parental training aimed at curbing disruptive behaviors in children is behavioral parent training (BPT). As an intervention method, BPT functions through the idea that children’s behaviors are extrinsically motivated, thus, by training parents to effectively reinforce positive behaviors through the use of reward and punishment, children’s compliant behavior should improve while reducing disruptive behaviors (Maughan, Jensen, Christianson, Olympia, & Clark, 2005). Much of the literature revolving around BPT has shown that it does result in a significant decrease in disruptive behaviors, albeit not as effectively as was previously thought (Maughan et al., 2005; Chacko et al., 2009). In addition, some literature has shown that BPT offers a short-term behavior fix and not a long-term solution for parents of children with Attention Deficit Hyperactivity Disorder (ADHD; Chacko et al., 2009). For children on the spectrum, studies have shown that behavioral practices can be helpful in improving children’s joint attention to objects, an intervention method that may also be used outside of a clinical treatment setting (Whalen & Schreibman, 2003). Joint attention is a key component in the identification of ASD in children; Whalen and Schreibman (2003) showed that the BPT can work to improve the function of certain motor and attention skills in children with autism. This also shows that BPT can work to make the disruptive behaviors amongst children with autism more manageable. By understanding how these intervention methods affect behavior, the study will see if the increase of compliance and the decrease in disruptive behaviors will translate over to a home setting where more homework, reading, and studying will be done by the child.

The aim of the proposed study is to see how the implementation of different parent trainings aimed at behavior interventions for children with ASD will affect their academic performance. The treatments used will be mindfulness parent behavioral training (MPBT), behavior parental training (BPT), and MPBT/BPT combined. It is expected that a combined treatment will result in improved academic performance as compared to the other
two groups as the deficits from one intervention may be picked up by the inclusion of the other.

Methods

Participants

Participants will be children who have been diagnosed by a licensed physician as having Autism Spectrum Disorder (ASD), attend public school, and will be in the fifth grade to control for difficulty and amount of material being taught. There will be 50 students, (25 male, 25 female), who are in the bottom quartile of state-mandated standardized testing for both math and reading.

Measures

Childhood Autism Rating Scale (CARS). Parents will be asked to fill out the Childhood Autism Rating Scale (CARS; Schopler, Reichler, DeVellis, & Daly, 1980). The CARS is a measure that is meant to be an objective classification of children on the autism spectrum based on 15 scales with the combined score being within the range of 15 and 60. Each scale ranges from one to four, with one being normal limits of abnormality for the child and four being severely abnormal behavior. These scales are then added up at the end of the survey, with higher scores representing more abnormal behaviors (Schopler et al., 1980).

Parental Stress Index (PSI-4). The Parental Stress Index-4 (PSI-4; Abidin & Abidin, 1990) acts as a screener for the stress felt in parent-child relationships. By being able to determine dysfunctional parenting, the PSI-4 can be used to predict disruptive child behavior. There are 120 items focusing on three major stress domains: child characteristic, parent characteristics, and situational and demographic life stress. It is split under two domains, the child and the parent domains, with six and seven sections each, respectively. The scores are added up at the end and are placed in percentiles based on t-tests from said scores. (Abidin & Abidin, 1990).

Study Design

The design will follow a quantitative structure in which the results of standardized math and reading tests given every month of the study will be analyzed. The study will begin at the beginning of the year (i.e., January, 2020) and a weekly check-in will be administered by a research assistant to assess the stress of the parents using the PSI-4. After one month of treatment, the child will be administered a math exam consisting of ten fifth grade level word problems and a reading exam consisting of three passages with three comprehensive questions for each.

To begin, teachers of the students at intake will be asked to provide information on the students’ current academic performance and a brief letter explaining how the child has done in an academic setting beforehand. Families will fill out the PSI-4 to evaluate the amount of stress felt at home. Next, parents and children will be scheduled to attend a one-on-one parent training session between a researcher, parent(s) and child, during which the child will complete both a math and reading test to establish a pre-treatment baseline. This will occur the first week of January and in-lab training sessions will continue monthly. The three types of training will be BPT, MBPT, or a combined MBPT/BPT session.

The subjects will be randomly assigned to a condition. At the end of each month, the students’ responses on academic tests will be recorded. The grade from a scale of one to ten on whichever exam they take will be recorded and the difference, whether positive or negative, from the baseline exam will be recorded as well. This will be a longitudinal study occurring for the duration of 12 months, with one reading and one math exam at intake and six math and six reading exams taken over the course of the study. For the study, consent forms will be required from the parents and assent will be given by the child. Parents will receive a weekly assessment with the PSI-4 to establish weekly stress levels. In addition an examination consisting of ten questions from the New York State Testing Program (NYSTP) math section and three passages of three questions each from the reading section will be administered at the end of each month with no child seeing the same question twice.

Intervention

BPT. The parent training for the groups will follow the guidelines brought forward by the Research Units in Behavioral Intervention (RUBI) Autism Network, which will lay the curriculum for the treatment plan (Bearss et al., 2018). The RUBI works as the ideal manual for this study as the manual lays out specific parental training methods as it pertains to children on the spectrum. The trainings will follow a modified training program that asks parents to come in once a week for eight weeks (i.e., for the first two months of the program) for one two-hour training each week. These sessions
will cover why behaviors occur, how to prevent them from happening, how to promote positive behavior, how to respond to challenging behaviors, how to replace challenging behaviors, and how to maintain positive behaviors.

**MBPT.** The Mindfulness Parent Program (MPP) will be used as a framework for the MBPT intervention part of the study. This specific program will be used as it focuses on mindfulness techniques aimed at reducing disruptive behaviors (Bogels & Restifo, 2013). The program is split into eight weeks of two and a half hour sessions. The trainings will follow a modified training program that asks parents to come in once a week for eight weeks (i.e., for the first two months of the program) for one two-hour training each week. This will match the amount of time spent in training by the above group.

**Combined MBPT and BPT.** The Combined MBPT and BPT study will follow both training protocols in a combined intervention with eight weeks of two-hour condensed training sessions.

**Planned Analysis**

The results will be analyzed using a repeated measure analysis of variance test (ANOVA) using the Statistical Package for Social Sciences (SPSS; Green & Salkind, 2016).

**Results**

It is expected that there will be small, yet significant improvements in the differences of test scores in math and reading for the MBPT and the BPT group. It is expected that the combined MBPT/BPT group will see the largest increases in academic performance as the child is being given a multifaceted form of treatment that not only focuses on the child’s compliance, but also on the parent’s reactions to disruptive behavior.

**Discussion**

The results of this study will add to the literature by improving the understanding of how to better integrate and support children with ASD in the educational system. In addition, determining an ideal intervention method for parents of children on the spectrum will allow for greater academic support and allow educators to focus on teaching rather than managing individual student behavior, especially special education teachers.

MBPT works to help the parent’s reactions to events and reassess a situation to find new solutions. BPT takes a different approach by teaching concrete ways to reinforce positive behaviors and reduce challenging behaviors. This is the main reason for the belief that a combined intervention plan will be most beneficial. Limitations of the proposed study, however, have to do with the fact that children with autism’s diagnoses lie on a spectrum and there is no way to standardize or specialize the program in which this intervention is completely effective in treatment. To try and control for this variance, the stratification of students into the different groups based on their CARS scores will be essential.

The hope of this study is not to find a way to fully treat children with ASD in order to cure them. Rather, the goal of this study is to establish a foundation for future research into the education of these children as well as to aid in the reduction of the stigmatization of the learning capability of this population. There is not much research done on how behavioral training or mindfulness training can be used to help children with ASD to excel; thus, this study hopes to add and inspire this kind of work to continue in the future.

**References**


BIOGRAPHIES
Serena Chen is a first semester senior in the Derner School of Psychology at Adelphi University, with a double major in psychology and philosophy. She is lab manager of the Barber Psychotherapy Lab where she transcribes psychotherapy sessions for panic disorder and oversees multiple lab research projects. She is also a graduate of the NYU Applied Psychology QUEST Program, where she was a research assistant in the Play and Language Lab working primarily on a project exploring the effects of ambient noise on infant play behaviors within a naturalistic home environment. In the future, Serena plans to pursue graduate school in psychology and research the effects of culture on language use in people receiving mental health services.

Shelby Amour Castillo graduated from Hamilton College with a major in psychology and minor in creative writing. Interested in continuing her education, she joined the NYU QUEST program with RISE laboratory. Her work previously focused on colonial mentality in Puerto Rican populations—an issue close to her heart as an Afro-Boricua from New York City. She joined RISE laboratory, which focuses on girls in the juvenile justice system, because she is interested in working with incarcerated populations and their families. Currently, Castillo works in the Department of Child and Adolescent Psychiatry at NYU Langone’s Child Study Center as a Care Coordinator. She hopes to join a PhD program in the near future that will help her gain clinical and counseling skills while still centering broader social issues. Her main goal is to provide and expand mental health services to those who are underserved while eradicating stigma around mental diversity.

Judith Konamah is a Senior pursuing her bachelor’s degree at Baruch College with a major in Psychology and a minor in Communications. She previously worked as a research assistant in the Baruch Dynamic Learning Lab where she helped conduct research on The Effect of Social Cues on the Hypercorrection Effect. She also volunteered at Elmhurst hospital where she worked with children with different mental disorders and developmental challenges. She is interested in learning about how one’s environment and the behaviors of others influence emotional development.

Yovani Muñoz is a 4th year at California State University, Fresno. I am currently a double major in Psychology and Chicano and Latin American Studies (CLAS). As well as being an Honors scholar for both departments. My current involvement is as a Research Assistant under Dr. Rosa Toro for her Immigrant Families’ Acculturative and Environmental Settings (IFACES) lab. I enjoy collecting vinyl records and going to local art hops while being an active member of two organizations within my county.
Parsa Najmaie is a recently graduated psychology major from Barnard College, Columbia University from Minneapolis, Minnesota. She focussed her studies in early child development and is specifically interested in dedicating her life to risk and resilience research. To do so, she intends on pursing a doctorate degree in Developmental Psychology. Outside of academia, Parsa is a nationally-ranked competitive junior powerlifter for USA Powerlifting. Parsa hopes to combine her passions in becoming a professor and a powerlifting coach. As an Iranian-American woman, she hopes that in doing so, she will be able to provide space for Middle Eastern women’s representation in both strength sports and academia.

Sophia Nguyen is a recipient of the 2019 Quality Undergraduate Education and Scholarly Training (QUEST) program at NYU and recent psychology graduate at Portland State University. Throughout her undergraduate journey, Sophia had the opportunity to gain various psychology research experiences. Sophia was a Ronald E. McNair Scholar at Portland State, where she conducted an independent research project and became a research assistant to the Development in Cultural Context Lab. Sophia’s research interests include a combination of early childhood development and social-emotional outcomes. After graduation, Sophia hopes to continue her education and further explore how different learning contexts improve the social-emotional outcomes for children at risk.

Ivelisse M. Pedreira García is a graduate student in Clinical Psychology at the University of Puerto Rico, Río Piedras Campus. She previously worked with Dr. John Jost in a collaborative project between the University of Puerto Rico and the Social Justice Lab at NYU focused on Puerto Rican’s perceptions of the political status of the island. She also worked with Natalie Brito, PhD in the ISLAND Lab which focuses on how various aspects of the home environment impact infant’s memory, language and attention. She is currently working as a research assistant with Sara Santiago, PhD and hopes to expand her knowledge in psychology by doing interdisciplinary research.

Moira Quinn is a graduate from Rutgers University with a major in Psychology and minor in Sociology. Moira recently concluded an intensive QUEST summer research program in NYU Steinhardt’s Applied Psychology department. During the QUEST program Moira interned in the Pre-K For All lab, and conducted research on the Universal Pre-K metrics throughout NYC. Moira has also conducted independent research on the variations in public and private school psychology programs in addition to counseling at-risk youth in Newark, NJ. In the future Moira plans to pursue work in applied community psychology with research focused on poverty and social inequities. In her spare time Moira works for the State Park Service and advocates for environmental justice.
Ariyanna Simmons graduated from Adelphi University magna cum laude with a BA in Psychology. She is a member of Tau Sigma National Honor Society and Psi Chi National Honor Society. Under the supervision of Dr. Damian Stanley, she has conducted research that examines the source of implicit racial bias and its effect on ethnic-minorities. Her research interests stem from her experience of working with students in low-income neighborhoods through an educational program, Gaining Early Awareness and Readiness for Undergraduate Programs (G.E.A.R. U.P.). With an interest to explore the experiences of at-risk youth, she continued her research at NYU's R.I.S.E. Lab under the supervision of Dr. Shabnam Javdani and Dr. Erin Godfrey, where she worked on developing curriculum for the lab's SAFE SPACES project, an intervention program for youth and staff detention centers. She will continue her studies at Teachers College, Columbia University to pursue a graduate degree in Clinical Psychology.

Shayne Thomas recently graduated from The City College of New York with honor degrees in Psychology and Philosophy. Alongside his Psychology degree, he completed his Credentialed Alcoholism and Substance Abuse Counselor - Trainee (CASAC-T) certification. Mr. Thomas joined the Center for Research on Culture, Development and Education (CRCDE) lab as a Q.U.E.S.T. recipient during the summer of 2019. While working as a Research Assistant in the CRCDE lab, he sought to explore the role of maternal action on infants' object play development. Prior to being accepted into the Q.U.E.S.T. program, Mr. Thomas worked as a Research Assistant for the Department Chair, Professor Robert Melara, in the field of Cognitive Neuroscience. Mr. Thomas also has 288-clock hours of clinical experience in the field of substance abuse counseling. Currently, Mr. Thomas works as a Counselor at a Substance Abuse Outpatient facility.

Hin Wing (Florence) Tse recently received her B.A. in Psychology with a minor in Education Studies from the University of California, Los Angeles. She is interested in developing culturally informed practices and policies for improving the well-being of underserved groups, especially the Asian communities and immigrant populations. Aligning with her research interests, she has been volunteering and working in various research labs across different fields, including psychology, education, and public health. This summer, she worked in the Families and Children Experiencing Success Lab under Dr. Anil Chacko for the QUEST program. She is looking forward to pursuing a Ph.D. in Clinical Psychology.

Hi! My name is Salomon Villatoro and I had the opportunity to work in the FACES lab under Dr. Chacko with the mentorship of Tori Dahl this past summer. My research proposal for the QUEST Research Conference centered around Mindfulness and Behavioral training techniques as forms of academic intervention for children living with Autism Spectrum Disorder. Currently, my research interests revolve around the mental health and wellbeing of children living with disabilities and minority children. I am originally from a heavily Latinx neighborhood of Houston, Texas and I graduated from the University of Pennsylvania with a degree in the Biological Basis of Behavior and a minor in Chemistry. I am grateful to QUEST for the amazing experience I received over the summer and I am looking forward to applying the skills and experiences I have learned in my future work.