Associations and Outcomes of Positive Emotion Socialization in the Children of Mothers with Unipolar and Bipolar Depression

Honors Thesis

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Abstract

Emotion socialization (ES) is the way in which influential individuals in a child or adolescent's life react to, discuss, and express emotions, which in turn influences the child's own emotional responses and expression. Supportive positive emotion socialization (PES) beneficially affects cognitive functioning, well-being, and the ability to cope with various stressors and adversity. For parents, the occurrence of depression can negatively impact parenting patterns which can lead to child maladjustment and increased levels of psychopathology later in the child's life. Based on these consideration, I predicted that greater PES could act as a protective factor for children of parents with depression. This archival study aimed to analyze whether children of mothers with unipolar and bipolar depression perceived different levels of PES from their mothers compared to children of control mothers. Additionally, the study longitudinally assessed whether children who had perceived greater levels of PES would exhibit less psychopathology and greater well-being at later time points compared to children who had perceived lower PES. After multiple analyses, these hypotheses were not supported. However, further research needs to be conducted on this topic using different measures and a more environmentally inclusive lens in order to obtain a more comprehensive view of the relationship between maternal depression and PES, which could ultimately lead to better outcomes for children of mothers with unipolar and bipolar depression.

Association and Outcomes of Positive Emotion Socialization in the Children of Mothers with Unipolar and Bipolar Depression

Emotion socialization is the way in which influential individuals in a child or adolescent's life react to, discuss, and express emotions, which in turn influences the child's own emotional responses and expression (Zahn-Waxler, Klimes-Dougan, & Kendziora, 1998). These specific learnings about emotions can happen in many contexts between various people and the child, but especially in the relationship between a parent and child. Emotion socialization of children by parents has most commonly been the focus of past literature, particularly on the socialization of negative emotions, such as anger, sadness, and fear (Garside & Klimes-Dougan, 2002; Klimes-Dougan et al., 2013). Conversely, positive emotion socialization (PES) has been examined less, despite beneficial PES practices potentially having important implications for supporting resilience in children (Cohn, Frederickson, Brown, Mikels, & Conway, 2009; Folkman & Moskowitz, 2000; Tugade, M. M., Fredrickson, & Barrett, 2004).

Most parents aim to give their children happy lives with an abundance of positive experiences. Initially parents often create situations in which children can be immersed in positive emotions by using techniques such as modeling positive facial expressions to infants and providing stimulating environments (Fredrickson, 1998a). However, as their children grow they typically shift to giving their children these opportunities through more indirect methods, such as creating play dates with other children. Not only do these submersions into positivity allow for the feeling of positive emotions, which is a worthy effort on its own, but these positive experiences have several other beneficial outcomes. Fredrickson's Broaden-and-Build Theory, developed using a variety of studies over the past two decades, asserts that positive emotions allow for increased cognitive flexibility in the short-term and long-term allowing individuals to

build broader personal resources (2001, 2002, 2013). The effects of these emotions have multiple long-term functions that build personal resources to be used in later incidents that are stressful or threatening. Moreover, Fredrickson's 1998 work focuses on the *undoing hypothesis,* which theorizes that positive emotions not only allow an individual to build future resources, but also allow an individual to ameliorate the hold of negative emotions(1989b).

The evidence presented in past literature supporting the benefits of positive emotions in many contexts raises the question of if these benefits could be utilized as a protective factor for the children of parents experiencing unipolar and bipolar depression. Children of depressed parents have a rate of depression three to four times that of children with parents that do not have a mental health diagnosis (Thapar, Collishaw, S., Pine, & Thapar, 2012). Furthermore, the children of parents with bipolar disorder are two and a half times more likely to develop a mental illness compared to children of parents without a disorder (Lapalme, Hodgins, LaRoche, 1997). Additionally, even those children of depressed parents that do not develop psychopathology still tend to have other adjustment issues, including deficits in social and academic competence and worse physical health (Downey & Coyne, 1990). These high rates of maladjustment and psychopathology in children of parents with unipolar and bipolar depression necessitate research into the various environmental factors that can decrease this phenomenon, specifically in regard to the parent-child relationship.

Parents with depression have a well-established pattern of dysregulated parenting, which is thought to be associated with their children's later maladjustment (Radke-Yarrow, 1998; Lovejoy et al., 2000; Downey & Coyne, 1990). Specifically, parents with depression tend to have more negative interactions, are less responsive, and overall have fewer positive interactions with their children (Lovejoy et al. 2000). Parents with bipolar depression tend to exhibit similar

maladaptive behaviors by being less expressive and engaging in more negative communication with their children (Vance, Huntley, Espie, Bentall, & Tai, 2008; Inoff-Germain, Nottelman, & Radke-Yarrow, 1992). These maladaptive patterns presented by parents also tend to persist throughout the lifetime of the child. When analyzing the responsiveness and affective patterns of mothers with unipolar depression, Feng, Shaw, Skuban, and Lane found that these parenting traits tended to be stable throughout the child's development (2007); thus, further increasing the importance of studying interventions for these dysregulated parenting practices.

Based on these patterns of dysfunction, it seems possible that utilizing the opposite strategies, that is being responsive and positive with their children, could act as a protective factor for children of parents with depression. Collishaw and colleagues conducted a longitudinal study in which they examined various protective factors associated with better mental health in adolescents that had parents with unipolar depression (2016). They found that positive emotion expressed by parents was a significant factor associated with better mental health in the offspring. Their finding supports the idea that increased amounts of PES could act as a possible protective factor for these children, although their study did not include parents with bipolar depression. These findings suggest that studying PES as a potential protective factor for children that have parents with unipolar or bipolar depression could be of significant interest as a possible method for increasing well-being and decreasing psychopathology in these populations.

This archival study aimed to explore the role of PES as a possible protective factor for children of mothers with unipolar and bipolar depression. The researcher first assessed if the sample conformed to the well-established trend between maternal depression and worse childhood outcomes, as hypothesized due to the wealth of literature surrounding this association. Then, the researcher examined if children of mothers with bipolar and unipolar depression

differed in their perception of PES from each other, and if these perceptions of PES differed from that of children of mothers without diagnoses. Finally, the researcher investigated if perceived PES could be a mediator in the relationship between maternal lifetime diagnosis and childhood outcomes (see Figure 1). This was assessed by seeing if a relationship existed between maternal lifetime diagnosis and PES, as well as PES and childhood outcome.

The researcher hypothesized that children who perceived that their mothers provided more reinforcement on their positive emotions would exhibit increased well-being and decreased psychopathological symptomology compared to the children will less reinforced positive emotions. Furthermore, the researcher hypothesized that children of mothers with bipolar depression would perceive their mothers as exhibiting more reinforcing PES practices compared to children of mothers with unipolar depression, and that both groups would exhibit less reinforcing PES than the control group. Additionally, the researchers hypothesized that if PES was acting as a protective factor, then those children that had depressed mothers and higher levels of PES would exhibit similar levels of functioning as children of control mothers.

Method

Participants

The participants in the current study were part of a larger longitudinal study spanning over two decades that examined the children of mothers diagnosed with unipolar depression, bipolar depression, or without any previous mental health diagnoses (Klimes-Dougan et al., 1999; Radke-Yarrow et al. 1998). Participants were recruited through advertisements in newspapers and flyers that recruited families with a mother as the main caregiver and two children (one between 1.5 years and 3.5 years and another 5-8 years old), although in four cases mothers only had one child. Interested participants were then screened via telephone to

determine their eligibility in terms of the aforementioned family structure. After the phone screen, the families came to the research laboratory in order to determine eligibility based on the mother's diagnosis using the Schedule for Affective Disorders and Schizophrenia (SADS-L; Spitzer & Endicott, 1977). Additionally, if fathers were present in the home, they were given the SADS-L to determine if they met criteria for anxiety or depression. If the mother had a depressive disorder, the family was able to participate regardless of the father's diagnostic status. However, in order to be considered a control, neither parent could have a mental health diagnosis prior to or during the study. Based on these criteria, there were originally 120 families, but throughout the examined time points there were 98 families.

The focus on this study was on the Time 3, 4, and 5 assessments (see Table 1 for demographic information). The children's ages at each time period were as follows: At Time 3, the children were between 7 and 16 (M = 11.11, SD = 2.26). At Time 4, the children were between 10 and 21 (M= 15.55, SD = 2.61). At Time 5, the participants were between 18 and 28 (M = 21.90, SD = 2.55). There were 192 child participants at these time periods that will be examined in this study, which is a 10.69% attrition rate from the original number of participants at Time 1, 215. Of the child participants, 88 were males and 104 were females. Furthermore, the maternal diagnoses of the mothers were as follows: 48 bipolar depression, 84 unipolar depression, and 60 no diagnosis. Additionally, the ethnic makeup of the participants was 85.4% Caucasian, 11.5% African American, 2.1% Asian, and 1% Hispanic. Most of the participants were in the middle to upper-middle class, which was determined using the Hollingshead four-factor index (Hollingshead, 1975). All participants received monetary compensation in exchange for their participation in accordance with IRB standards.

Procedure

Mothers were recruited along with their two children. The mothers and children were measured at five different time periods after the initial meeting. At Time 3, mothers completed the Child Behavioral Checklist (CBCL) and the children completed the My Family and Friends Measure (Achenbach, 1991a; Reid & Landesman, 1986). Then, at Time 4 the mothers of the participants returned and again completed the CBCL. Finally, at Time 5 the children completed the Youth Self Report (YSR; Achenbach, 1991b). At each time period, participants also completed a variety of other measures, but for the purposes of this study only relevant measures are included.

Materials

Maternal Depression. Maternal diagnosis was based on early reports of symptoms (based on Time 1 and Time 3 assessments) that were assessed using two diagnostic instruments, The SADS-L (Spitzer & Endicott, 1977) and the Structured Clinical Interview for DSM-III-R (SCID; Spitzer, Williams, & Gibbon, 1987). Based on this assessment by a psychiatric nurse (100% agreement on diagnoses between nurse and trained staff member of the New York Psychiatric Institute), a diagnosis was established for each maternal participant.

Positive Emotion Socialization. In order to measure the amount of PES the child perceived from the parent, the "My Family and Friends Measure" was used at Time 3 (see Appendix; Reid & Landesman, 1986). The measure asks a variety of questions about who the child would go to in a variety of emotional states, including happy, sad, or mad. In order to respond to these questions, the child had a small deck of cards that each had the name of a significant person in the child's life as defined by the child (e.g. mother, father, sister, brother, etc.) that they used to rank who they would be most likely to go to in each situation. Additionally, they asked how satisfied the

child hypothetically would be with the outcome of this encounter, using a 6-point scale that ranged from *not very* (0) to *a whole lot* (50). For the purposes of this study, only the children's ratings of the mothers during positive situations were used (e.g. "When you tell your mother about the good thing that happened, how happy does it really make you feel?"; Reid & Landesman, 1986). The test-retest reliability of this measure, per Reid and colleagues' 1989 analysis, ranges between .68 and .69 using intraclass correlation coefficients. Additionally, the convergent validity of the children's understandings of the different types of social support was measured as more than 90% of the children having an appropriate comprehension of these questions.

In order to score the My Family and Friends measure for the purposes of analysis, the percent of times the mother was ranked as the first emotional support in positive situations was calculated for the overall measure. Additionally, the researcher analyzed results from the question which asked who the child would seek out to discuss a positive event. This was done by recording the ranking that children had assigned to their mothers in terms of people they would go to in this positive scenario.

Childhood Outcomes. The CBCL was used at Time 3 and 4 to assess the children's symptomology (Achenbach, 1991a), while the YSR was used at Time 5 (Achenbach, 1991b). The CBCL is a report measure that was administered to parents. Parents completed the checklist of different possible behavior problems that can be divided into a variety of problem scales, though for this study only the total problem scores were used. Likewise, the YSR is a self-report measure that was derived from the CBCL that functions similarly but is administered to the child instead of the parent. Likewise, it can be divided into several sub-scales, but only the total problem score was used. Both measures are well-validated and reliable.

Statistical Analysis

Childhood Outcomes The relationship between maternal lifetime diagnosis and childhood outcome was analyzed using a univariate general linear model. The total problem scores from the CBCL at Time 3 and 4 and the YSR at Time 5, respectively, were used to complete these analyses. Additionally, socioeconomic status, which was recorded using the Hollingshead four factor index, was used as a covariate because it was found to have a significant association with maternal lifetime diagnosis. Bonferroni post hoc tests were conducted for each time point.

Positive Emotion Socialization PES was calculated using the percent of times the mother was the child's first choice for emotional support on the My Family and Friends measure (Reid et al., 1989). The association of PES with maternal lifetime diagnosis was also analyzed using an ANOVA. For increased specificity, the question asking about happiness with mothers on the My Family and Friends measure was analyzed using the ranking given by the children for their mother. Then, an ANOVA was conducted to determine if there were any significant differences between the groups.

Results

Group Difference in Childhood Outcomes There was a significant relationship between maternal lifetime diagnosis and childhood outcome at each time point according to the analyses ($F(2,184)= 15.034$, $p < .000$; $F(2,182)= 9.912$, $p < .000$; $F(2,127)= 3.362$, $p = .038$). Bonferroni post hoc tests revealed that at Time 3 and 4, children of bipolar and unipolar depressed mothers were rated significantly higher on the CBCL than children of control mothers, though they did not significantly differ from each other (see Table 1-2 and Figures 2-3). Additionally, at Time 5, the scores of the children of mothers with bipolar depression were significantly higher than those

of the children of mothers with unipolar depression, but neither depressed group was significantly different from the control group (p =.041; see Table 3 and Figure 4).

Group Differences on Positive Emotion Socialization There was not a significant relationship between the overall positive emotion questions on the My Family and Friends measure and maternal lifetime diagnosis (F(2,179) = .585, p=.558). Additionally, there were no significant differences between the groups when analyzing the aforementioned specific question and maternal lifetime diagnosis (F(2,179) = .079, p = .924). Furthermore, PES's connection to childhood outcomes was investigated using a correlation, but there were no significant associations (Time 3 r = .052, p = .485; Time 4 r = .008, p = .858; Time 5 r = -.049, p = .592).

Mediation Analysis No mediation model analyses were conducted, as they require all relationships among the key variables to be significant.

Discussion

This study had two initial hypotheses regarding maternal diagnoses and PES. The first hypothesis asserted that children of mothers with unipolar and bipolar depression would perceive less PES from their mothers as compared to children with mothers without depression. Additionally, we hypothesized that children with increased perception of PES would exhibit decreased symptomology. Based on the insignificant findings, the hypotheses were not supported. However, the study added to the literature by supporting the well-established link between maternal depression and increased likelihood of child psychopathology. Further research needs to be conducted into this topic using different measures and a more environmentally inclusive lens in order to obtain a more comprehensive view of maternal depression's relationship with PES.

One of the key limitations in this study is the possible unreliability of one of the measures used. Because of the archival nature of the data set and resulting limitations in instrument availability, the My Family and Friends measure was used to assess the questions of interest regarding PES, though its reliability in examining these questions is of concern in certain populations. Reid and colleague's evaluation of the My Family and Friends measure found that while generally the reliability of this measure is good, there was a subpopulation that had highly variable test-retest reliability scores (1989). After some analyses of these variable children versus the reliable children, they found that the unreliable children were experiencing a variety of stressors and upheaval in the home. Further investigation into the specific issues that these children were experiencing revealed that parental divorce and parental depression/marital dissatisfaction were the top two categories of stressors. Based on these findings, it is possible that this measure may have been inappropriate for reliably capturing an accurate view of children's perception of PES in the context of familial stress and depression, which was the population investigated in this study. In future studies, more significant results might be found in the relationships of interest by using a measure that is more reliable for this population.

Another limitation of this study lies in the demographics. The sample was overwhelmingly Caucasian, which is not representative of the population. Additionally, different ethnicities may have different cultural expectations regarding PES, so what might be considered as high levels in one culture might be perceived as lower level socialization in another. Studying this concept only in terms of Caucasian, middle income individuals does not give an effective baseline for how PES generally functions in different cultures. Furthermore, depression can be exhibited differently based on culture (e.g. individuals in non-Western countries with MDD reporting more somatic complaints), so it is also imperative to investigate how the intersection of

maternal depression and PES vary based on culture. Thus, in future studies it will be important to explore PES generally and especially in conjunction with maternal depression in different cultures.

Future research should also examine PES with a more environmentally inclusive lens. While this study focused on the mother-child relationship, future research should also investigate the role of other significant people in a child's life. This could include friends, fathers, other caregivers, coaches, teachers, and any other significant members of a child's life that are involved in the child's PES process. Having a more broadly focused study would better encapsulate the intricacies of the emotion socialization process by including multiple different perspectives and influences instead of just one aspect.

Another avenue of future research would be to record the continuity of PES in children and adolescents. Including information about the continuity of PES would better allow researchers to understand the changing dynamics of emotion socialization as a child progresses throughout their lifespan. Additionally, this would give increased insight into the relationship between various factors such as child and maternal symptomology and emotion socialization as those variables change.

These avenues of future research and improved variations of this study could lead to intervention strategies for the children of depressed mothers, which could decrease the rates at which the children experience future depression and other mental illnesses, as well as improving future outcomes. Overall, this research could lead to decreased likelihood in heritability of unipolar and bipolar depression by identifying important moderators within the parent-child relationship.

References

Achenbach, T. M. (1991a). *Manual for the child behavior checklist/4-18 and 1991 profile*. Burlington, VT: University of Vermont Department of Psychiatry.

Achenbach, T. M. (1991b). *Manual for the youth self-report and 1991 profile*. Burlington, VT: University of Vermont Department of Psychiatry.

Cohn, M. A., Fredrickson, B. L., Brown, S. L., Mikels, J. A., & Conway, A. M. (2009). Happiness unpacked: Positive emotions increase life satisfaction by building resilience. *Emotion*, *9*, 361-368.

Collishaw, S., Hammerton, G., Mahedy, L., Sellers, R., Owen, M. J., Craddock, N., Thapar, A. K., Harold, G. T., Rice, F., & Thapar, A. (2016). Mental health resilience in the adolescent offspring of parents with depression: A prospective longitudinal study. Lancet Psychiatry, 3(1), 49-57.

Downey, G., & Cowney, J. C. (1990). Children of depressed parents: An integrative review. *Psychological Bulletin, 108*(1), 50-76

Feng, X., Shaw, D. S., Skuban, E. M., & Lane, T. (2007). Emotional exchange in mother-child dyads: Stability, mutual influence, and associations with maternal depression and child problem behavior. *Journal of Family Psychology*, *21*, 714-725.

Folkman, S., & Moskowitz, J. T. (2000). Positive affect and the other side of coping. *American Psychologist*, *55*, 647-654.

Fredrickson, B. L. (1998a). Cultivated emotions: Parental socialization of positive emotions and self-conscious emotions. *Psychological Inquiry, 9*(4), 279-281. doi: 10.1207/s15327965pli0904_4

Fredrickson, BL. (1998b). What good are positive emotions? Rev Gen Psychol, 2(3), 300-319. doi:10.1037/1089-2680.2.3.300.

Fredrickson, B.L. (2001). The role of positive emotions in positive psychology. Am Psychol, 56(3), 218-226.

Fredrickson, B. L., & Joiner, T. (2002). Positive emotions trigger upward spirals toward emotional well-being. Psychological Science, 13(2), 172-175.

Fredrickson, B.L. (2013) Chapter 1 - Positive emotions broaden and build. *Advances in Experimental Social Psychology, 47*, 1-51.

Garside, R. B. & Klimes-Dougan, B. (2002). Socialization of discrete negative emotions: Gender differences and links with psychological distress. *Sex Roles, 47*(3/4), 115-128.

Hollingshead, A. B. (1975). *Four factor index of social status*. Unpublished manuscript, Yale University, New Haven, CT.

Lapalme, M., Hodgins, S., LaRoche, C. (1997). Children of parents with bipolar disorder: A mataanalysis of risk for mental disorders. *Can J Psychiatry, 42*, 623-631.

Lovejoy, M. C., Graczyk, P. A., O'Hare, E., & Neuman, G. (2000). Maternal depression and parenting behavior: A meta-analytic review. Clinical Psychology Review, 20(5), 561-592.

Magai, C. M. (1996). *Emotions as a child self-rating scale*. Unpublished measure, Long Island University, New York.

Klimes-Dougan, B., Pearson, T. E., Jappe, L., Mathieson, L., Simard, M. R., Hastings, P., & Zahn-Waxler, C. (2013). Adolescent emotion socialization: A longitudinal study of friends' responses to negative emotions. *Social Development, 23*(2), 395-412. doi:10.1111/sode.12045

Radke-Yarrow, M., Martinez, P., Mayfield, A., & Ronsaville, D. (1998). Children of depressed mothers: From early childhood to maturity. New York: Cambridge University Press.

Reid, M., & Landesman, S. (1986). My Family and Friends: A social support dialogue Instrument for Children. Seattle, WA: University of Washington.

Reid, M. Landesman, S., Treder, R., Jaccard, J. (1989). "My Family and Friends": Six-to twelve-year-old children's perceptions of social support. *Society for Research in Child Development*, *60*(4), 896-910.

Thapar, A., Collishaw, S., Pine, D. S., & Thapar, A. K. (2012). Depression in adolescence. *Lancet*, *379*(9820), 1056-1067. doi:10.1016/S0140-6736(11)60871-4.

Tugade, M. M., Fredrickson, B. L., & Feldman Barrett, L. (2004). Psychological resilience and positive emotional granularity: Examining the benefits of positive emotions on coping and health. *Journal of Personality*, *72*, 1161-1190.

Vance, Y. H., Huntley, S. J., Espie, J., Bentall, R., & Tai, S. (2008). Parental communication style and family relationships in children of bipolar parents. British Journal of Clinical Psychology, 47(3), 355-359. doi: 10.1348/014466508X282824

Zahn-Waxler, C., Klimes-Dougan, B., & Kendziora, K. T. (1998). The study of emotion socialization: Conceptual, methodological, and developmental considerations. Psychological Inquiry, 9(4), 313-316.

Appendix

Sample Page of Reid's 1986 "My Family and Friends" Measure

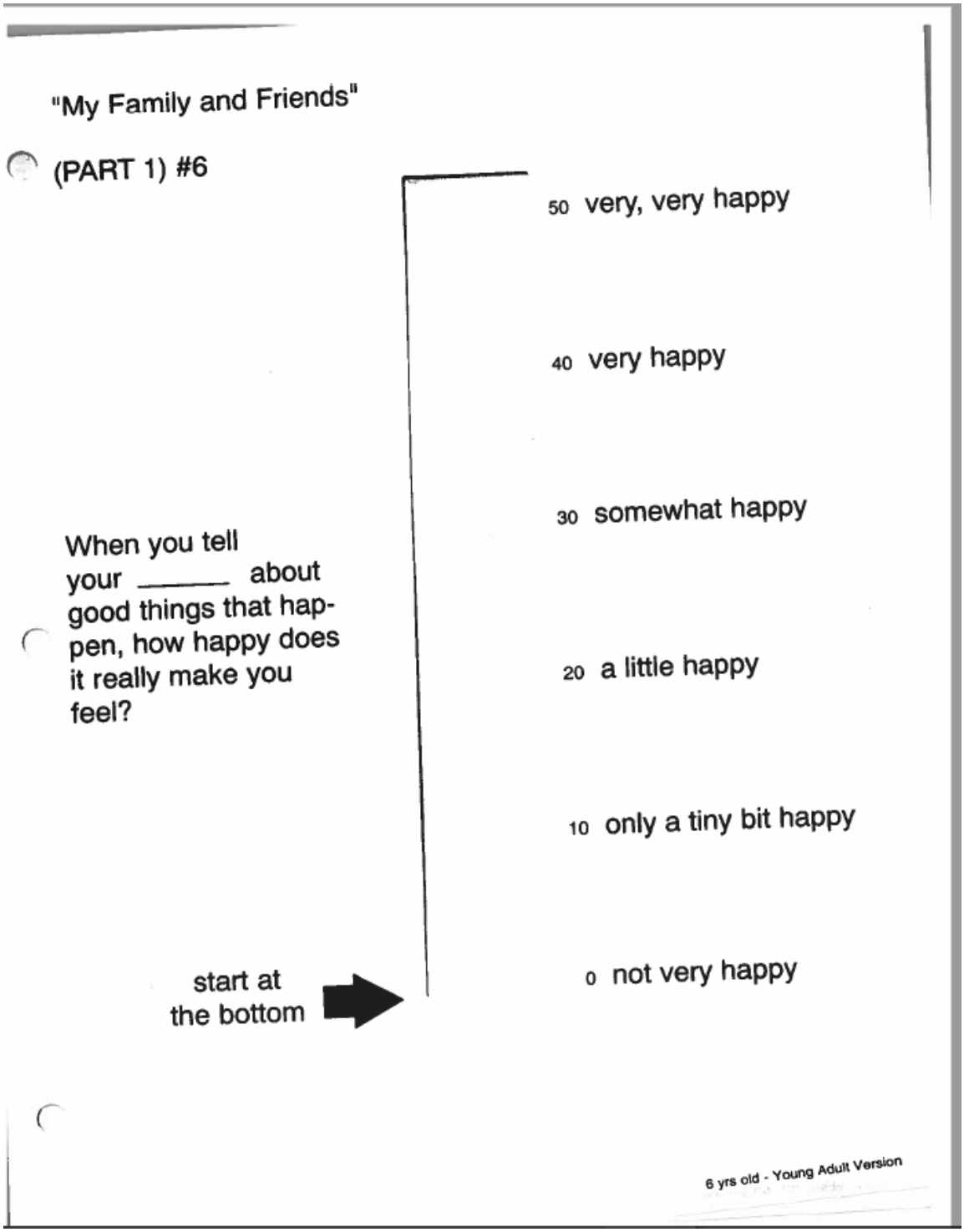

Table 1. *Participant demographics*

Child Demographics	***Maternal Unipolar Depression (N= 84)***	***Maternal Bipolar Depression (N=48)***	***Maternal Controls (N=60)***	***Total (N=192)***
Age – M				
Age at Time 3 (Mean ± SD)	11.26 ± 2.34	10.76 ± 2.29	11.17 ± 2.12	11.11 ± .2.26
Age at Time 4 (Mean ± SD)	15.89 ± 2.63	14.93 ± 2.58	15.84 ± 2.56	15.55 ± 2.61
Age at Time 5 (Mean ± SD)	22.47 ± 2.53	21.00 ± 2.33	21.83 ± 2.58	21.90 ± 2.55
Gender - n				
Gender (Male/Female)	39/45	19/29	30/30	88/104
Race – n (%)				
Caucasian	70 (36.46%)	42 (21.88%)	52 (27.08%)	164 (85.42%)
African American	12 (6.25%)	4 (2.08%)	6 (3.13%)	22 (11.46%)
Asian	0 (0.00%)	2 (1.04%)	2 (1.04%)	4 (2.08%)
Latinx	2 (1.04%)	0 (0.00%)	0 (0.00%)	2 (1.04%)
SES - M				
Hollingshead (Mean ± SD)	47.67 ± 16.76	50.08 ± 14.23	56.40 ± 10.51	51.00 ± 14.84

Table 2. *Results of a Bonferroni post hoc test for the univariate general linear model comparing maternal lifetime diagnosis and CBCL scores at Time 3 when controlling for socioeconomic status.*

Maternal Lifetime Diagnosis	***Mean***	***Std. Error***	***95% Confidence Interval***	
			Lower Bound	***Upper Bound***
Control	10.256[a]	2.212	5.892	14.620
Bipolar	23.835 [a]	2.349	19.202	28.469
Major	25.510 [a]	1.808	21.943	29.076

a. Covariates appearing in the model are evaluated at a 1975 Hollinghead score of 51.28

		Mean Difference (I-J)	**Std. Error**	**Sig. [b]**	**95% Confidence Interval for Difference**	
					Lower Bound	Upper Bound
Control	*Bipolar*	-13.579*	3.242	.000	-21.412	-5.746
	Major	-15.253*	2.907	.000	-22.278	-8.229
Bipolar	*Control*	13.579*	3.242	.000	5.746	21.412
	Major	-1.674	2.954	1.000	-8.811	5.462
Major	*Control*	15.253*	2.907	.000	8.229	22.278
	Bipolar	1.674	2.954	1.000	-5.462	8.811

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Bonferroni.

Table 3. *Results of a Bonferroni post hoc test for the univariate general linear model comparing maternal lifetime diagnosis and CBCL scores at Time 4 when controlling for socioeconomic status.*

Maternal Lifetime Diagnosis	***Mean***	***Std. Error***	***95% Confidence Interval***	
			Lower Bound	***Upper Bound***
Control	11.737[a]	2.449	6.905	16.570
Bipolar	28.126 [a]	2.755	22.691	33.561
Major	20.485 [a]	2.013	16.514	24.455

a. Covariates appearing in the model are evaluated at a 1975 Hollinghead score of 50.76

		Mean Difference (I-J)	***Std. Error***	***Sig. b***	***95% Confidence Interval for Difference***	
					Lower Bound	***Upper Bound***
Control	*Bipolar*	-16.389*	3.702	.000	-25.333	-7.444
	Major	-8.747*	3.215	.021	-16.516	-.979
Bipolar	*Control*	16.389*	3.702	.000	7.444	25.333
	Major	7.641	3.402	.078	-.579	15.862
Major	*Control*	8.747*	3.215	.021	.979	16.516
	Bipolar	-7.641	3.402	.078	-15.862	.579

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Bonferroni.

Table 4. *Results of a Bonferroni post hoc test for the univariate general linear model comparing maternal lifetime diagnosis and YSR scores at Time 5 when controlling for socioeconomic status.*

Maternal Lifetime Diagnosis	***Mean***	***Std. Error***	***95% Confidence Interval***	
			Lower Bound	***Upper Bound***
Control	35.288[a]	4.136	27.104	43.473
Bipolar	47.263 [a]	4.436	38.485	56.041
Major	33.272 [a]	3.410	26.525	40.019

a. Covariates appearing in the model are evaluated at a 1975 Hollinghead score of 52.82

		Mean Difference (I-J)	***Std. Error***	***Sig. b***	***95% Confidence Interval for Difference***	
					Lower Bound	***Upper Bound***
Control	*Bipolar*	-11.975	6.062	.151	-26.682	2.732
	Major	2.016	5.473	1.000	-11.262	15.294
Bipolar	*Control*	11.975	6.062	.151	-2.732	26.682
	Major	13.991*	5.597	.041	.411	27.571
Major	*Control*	-2.016	5.473	1.000	-15.294	11.262
	Bipolar	-13.991*	5.597	.041	-27.571	-.411

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Bonferroni.

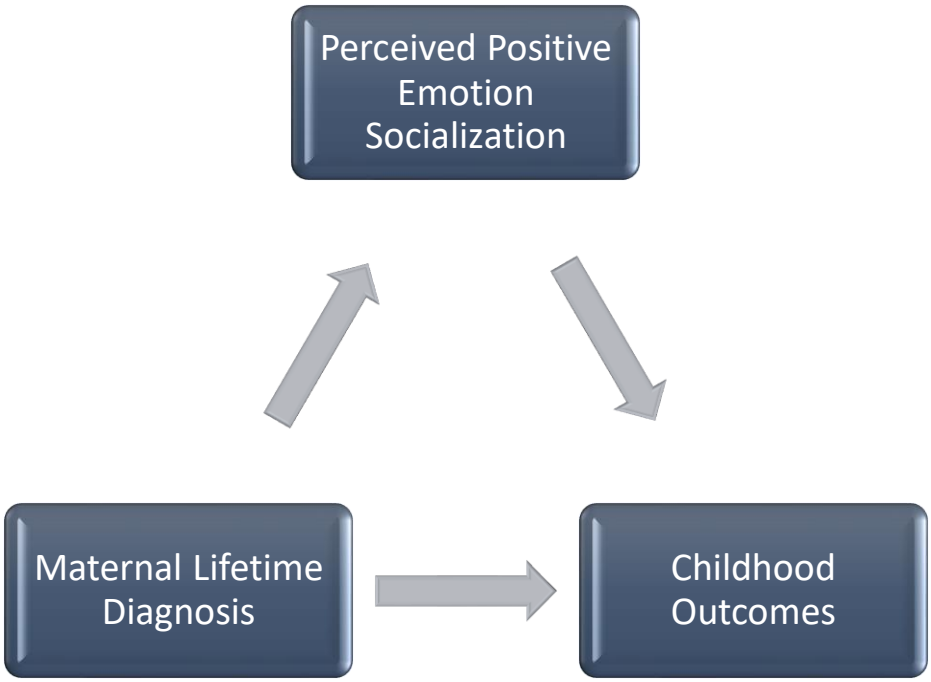

Figure 1. A flow chart depicting the hypothesized relationship between maternal lifetime diagnosis and childhood outcomes with perceived positive emotion socialization as a possible mediator.

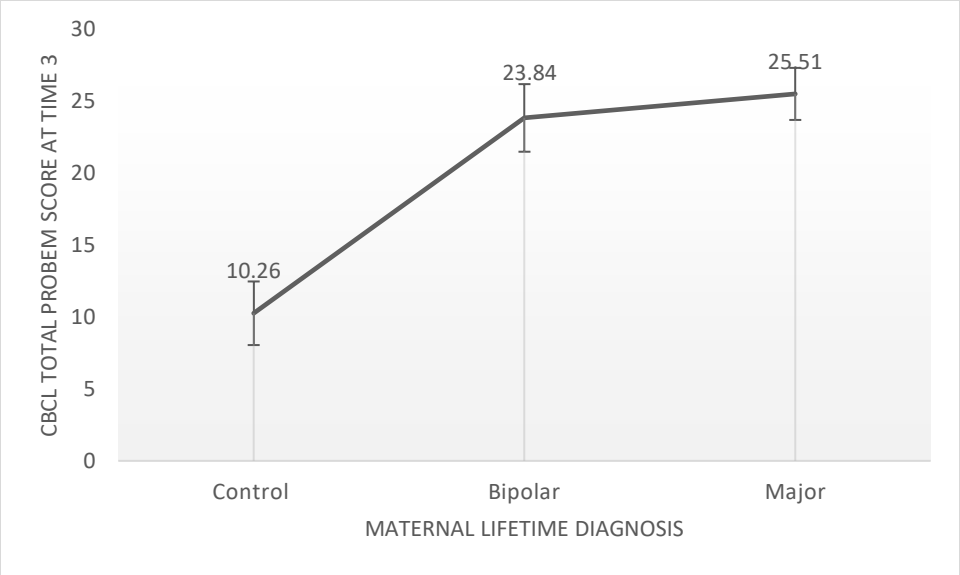

Figure 2. Line graph for the relationship between childhood outcomes and maternal lifetime diagnosis at Time 3. There was a significant difference between both of the depressed groups and the control condition, but no significant difference between the unipolar and bipolar depression groups. The means were adjusted using the covariate of socioeconomic status and the bars represent the standard error for each mean.

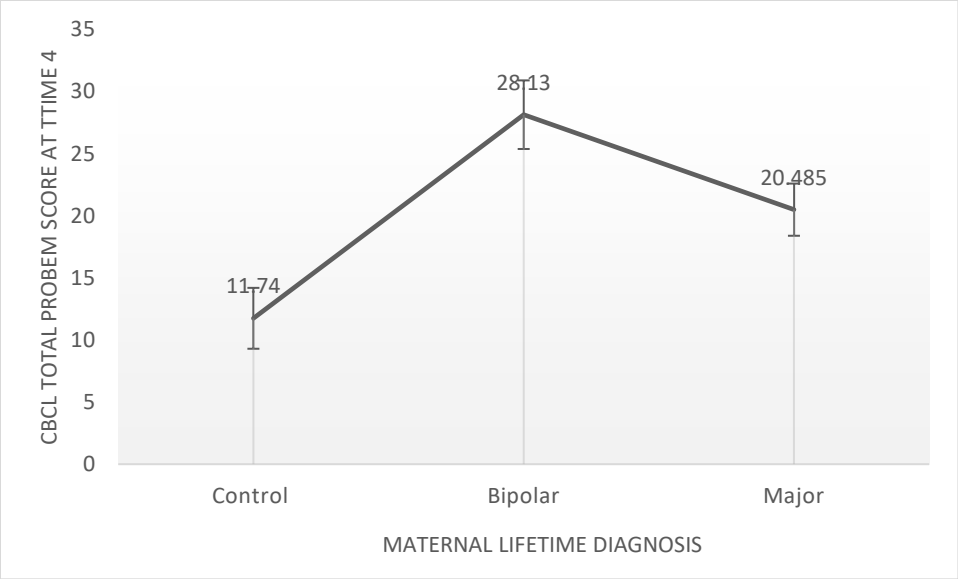

Figure 3. Line graph for the relationship between childhood outcomes and maternal lifetime diagnosis. There were significant differences between both of the depressed groups and the control condition, respectively, but no significant difference between the unipolar and bipolar depression groups. The means were adjusted using the covariate of socioeconomic status and the bars represent the standard error for each mean.

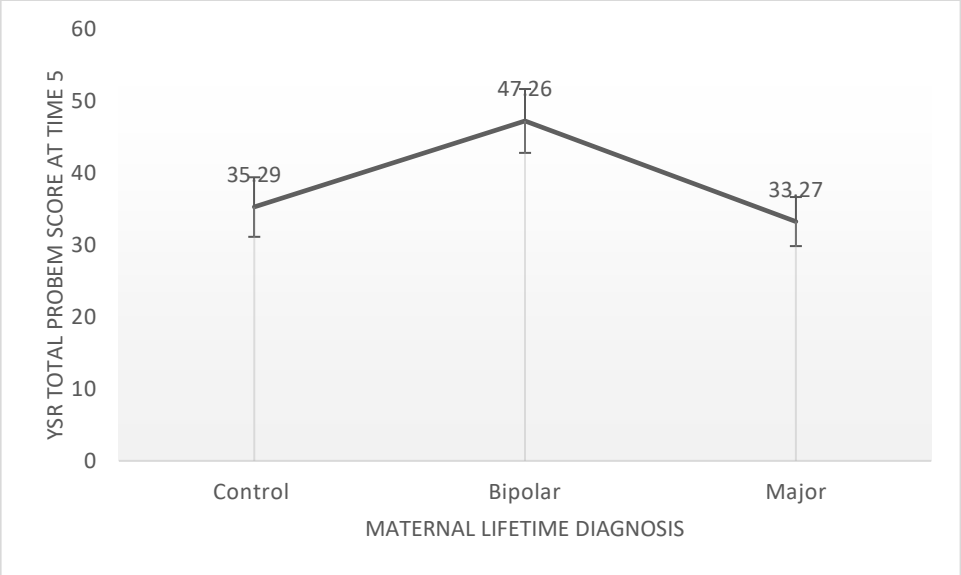

Figure 4. Line graph for the relationship between childhood outcomes and maternal lifetime diagnosis at Time 3. There was a significant difference between the scores of the unipolar and bipolar groups. The means were adjusted using the covariate of socioeconomic status and the bars represent the standard error for each mean.