

AGE DIFFERENCES IN EMOTION REGULATION IN TODDLER AND
PRESCHOOL CLASSROOMS

by

Kristina J. Herndon
A Thesis
Submitted to the
Graduate Faculty
of
George Mason University
in Partial Fulfillment of
The Requirements for the Degree
of
Master of Arts
Psychology

Committee:

Susanne A. Denham Director

[Signature]
Johnathan R. [Signature]

Jill Thompson Department Chairperson

Jamie S. Cooper Dean, College of Humanities and Social
Sciences

Date: July 26, 2013 Summer Semester 2013
George Mason University
Fairfax, VA

Age Differences in Emotion Regulation in Toddler and Preschool Classrooms

A thesis submitted in partial fulfillment of the requirements for the degree of Master of Arts at George Mason University

By

Kristina J. Herndon
Bachelor of Science
George Mason University, 2011

Director: Susanne A. Denham, Professor
Department of Psychology

Summer Semester 2013
George Mason University
Fairfax, VA

TABLE OF CONTENTS

	Page
List of Tables.....	iii
List of Figures.....	iv
List of Abbreviations.....	v
Abstract.....	vi
1. Age Differences in Emotion Regulation in Toddler and Preschool Classrooms.....	1
2. Method.....	7
3. Results.....	10
4. Discussion.....	12
5. Limitations and Conclusions.....	14
6. References.....	16

LIST OF TABLES

Table	Page
1. Descriptive MPAC-R/S Emotion Regulation/Dysregulation Aggregates	17

LIST OF FIGURES

Figure	Page
1. Means of Emotion Regulation/Dysregulation across Age Groups	18
2. Means of Emotion Dysregulation across Age Groups.....	18

ABSTRACT

AGE DIFFERENCES IN EMOTION REGULATION IN TODDLER AND PRESCHOOL CLASSROOMS

Kristina J. Herndon, M.A.

George Mason University, 2013

Thesis Director: Dr. Susanne A. Denham

Emotion regulation is necessary for children to learn to negotiate the demands of the preschool environment, form working relationships with teachers, develop friendships, succeed in academic achievement, and adjust to school (Shields et al., 2001; Denham et al., 2003; Fabes et al., 1999; Herndon, Bailey, Shewark, Denham & Bassett, in press; Schelble, Franks, & Miller, 2010). The purpose of this study was to explore emotion regulation and dysregulation techniques displayed by children in toddler classrooms compared to children in classrooms for 3- and 4-year-olds. Data was collected from 149 2-, 3-, and 4-year-olds using the *Positive Reactions to Emotionally Arousing Problem Situations and the Negative Reactions to Emotionally Arousing Problem Situations* subscales on the Minnesota Preschool Affect Checklist-Revised/Shortened (MPAC-R/S). It was found that emotion regulation occurs in 2-year-old classrooms. Furthermore, it was found that 4-year-olds showed significantly more emotion regulation in their

classrooms than 3-year-olds. Results have implications to further expand the social-emotional curriculum in preschools to include 2-year-olds to maximize their development of social-emotional competence.

AGE DIFFERENCES IN EMOTION REGULATION IN TODDLER AND PRESCHOOL CLASSROOMS

Preschool is a time of new challenges for young children; they must learn to negotiate the demands of the preschool environment, form working relationships with teachers, and develop friendships (Shields et al., 2001). Emotion regulation is crucial to meeting these demands successfully. It has been defined as the process by which an individual controls the timing, experience, and expression of his emotions (Davis, Levine, Lench, & Quas, 2010). As such, emotion regulation is a critical component of emotional competence and is necessary for children to have successful interactions with their peers, especially in stressful situations (Blair, Denham, Kichanoff, & Whipple, 2004). Being able to regulate emotions can ameliorate the difficulties children might face in a new and challenging setting, whereas emotion dysregulation can hinder a child's adjustment. Due to the stresses of the classroom, emotion regulation is not always successful. Therefore, emotion dysregulation is not the lack of emotion regulation, but occurs when a child uses less productive regulation techniques.

Previous literature has indicated that during preschool emotion regulation may increase with age (Epstein, Synhorst, Cress, & Allen, 2009; Fantuzzo et al., 2007). For example, Cole et al. (2009) found that 4-year-olds, compared to 3-year-olds, had a better understanding of the emotion regulation strategies they needed to use when confronted

with an emotional situation involving anger (Cole, Dennis, Smith-Simon & Cohen, 2009). However, early childhood care has evolved to not only include 3-and 4-year-olds, but also toddlers, so that it would be important to include these young children in understanding emotion regulation, especially in social settings like childcare. Research suggests that when toddlers are faced with an emotional situation they use various emotion regulation strategies, such as distracting themselves, seeking help, or self-comforting (Cole et al., 2011; Feldman, Dollberg, & Nadam, 2011; Graziano, Clakins, & Keane, 2011).

Thus, emotion regulation has been examined in two-year olds, but the research has relied almost exclusively on home- and lab- visits, and how influential parenting styles and maternal behavior are on 2-year-olds ability to regulate their own emotions. There is limited research that has thoroughly explored emotion regulation and dysregulation in 2-year-old classrooms. Accordingly, the purpose of this proposal is to explore emotion regulation and dysregulation in 2-year-olds in the classroom compared to 3-and 4-year-old classrooms, using the Minnesota Preschool Affect Checklist-Revised/Shortened (MPAC-R/S).

Expression and Regulation of Emotions

Emotion regulation encompasses appropriate expression of emotion for a given situation. Emotional expression and regulation are comprised of a preschoolers' ability to appropriately express and regulate an emotion in a productive way (e.g., a preschooler monitoring and being aware of the emotions surrounding him, and modifying his emotions when needed, so that he is able to cope in varying circumstances) (Cole,

Martin, & Dennis, 2004). Children who express more positive emotions are often rated as being more knowledgeable about emotions and can effectively regulate emotions (Denham et al., 2003; Garner & Estep, 2001). In contrast, children who display a pattern of negative affect are more likely to have difficulties in interacting with teachers and peers, which may cause problems in adjusting to their new environment (Denham, McKinlet, Couchoud & Holt, 1990; Miller, Seifer, Stroud, Sheinkopf & Dickstein, 2006). For the purposes of this proposal, emotion expression will be seen as a function of emotion regulation. Although there are instances of regulating the expressions of positive emotions (e.g., regulating silliness during circle time) I will only be concentrating on the regulation of negative emotions. Intuitively, unsuccessful regulation of negative emotions will be more disruptive in a classroom setting.

Emotion Regulation/ Dysregulation

During the preschool years the emergence of emotion regulation is important to create and maintain positive relationships with peers and teachers, academic achievement, and school adjustment (Denham et al., 2003; Fabes et al., 1999; Herndon et al., in press; Schelble, Franks, & Miller, 2010). When children succeed in regulating their emotions, they are able to conform to the demands of their social environment and age appropriate norms (Cole, Michel, & Teti, 1994). Since preschool marks a period of time where children are experiencing more complex emotionality in their interactions, emotion regulation becomes essential (Denham et al., 2003). Regulating emotions requires children to understand and control their outward expression of emotions and to modulate their internal states (Thompson & Calkins, 1996).

Children attempt to regulate their emotions using many strategies, regardless of whether these strategies are socially acceptable or not. Emotion dysregulation is strongly associated with social maladaptation. Specifically, when children use methods that are not appropriate for regulating their emotions (e.g., venting their negative emotions), they are more likely to engage in peer conflict, are less likable, and are rated as showing more negative emotion and aggression by teachers (Miller, Gouley, Siefer, Dickstein, & Shields, 2004). For example, dysregulated expression of emotions can disrupt activities in the classroom, which may not be well-received by peers and teachers. Consequently, children who exhibit emotion dysregulation are less likely to acquire social competencies, thus impeding their school adjustment (Contreras, Kerns, Weiner, Gentzler & Tomich, 2000; Herndon et al., in press). In contrast, the absence of emotion dysregulation is associated with positive outcomes, such as future academic resilience for children at risk (Schelble et al., 2010). In this study, regulation of emotions will be captured through the Positive Reactions to Emotionally Arousing Problem Situations subscale on MPAC-R/S. The two items on this MPAC-R/S subscale are indicated by verbal expression of emotion and description of the problem, and maintaining neutral or positive affect during the frustrating situation (Denham & Burton, 1996). To measure dysregulation of emotion, the Negative Reactions to Emotionally Arousing Problem Situations subscale will be used. The items on this subscale include displays of context related interpersonal aggression and object aggression. (Denham et al., 2012).

The Present Study

The goal of the present study was to explore the emergence of emotion regulation and dysregulation, as demonstrated during peer interaction, by using MPAC-R/S with two year-olds. Beginning around the age of 2, children begin to show that they have an understanding of how emotions influence their behaviors and peers behaviors (Thompson & Calkins, 1996). Through experience and help children begin to recognize that emotions are internal states that can be modified. Thus, toddlerhood may be a period of significance in the development of emotion regulation skills.

Research Question 1:

Unfortunately, the research concerned with the development of emotion regulation in toddlers concentrates on how parenting styles and maternal behavior influence toddlers' emotion regulation strategies. There is a gap in the literature on how emotion regulation is used by 2-year-olds in the classroom. Thus, my first research question involves the frequencies of emotion regulation and dysregulation behaviors in the classroom seen in 2-year-olds. It was hypothesized that when looking at expression of an emotion and emotion regulation/ dysregulation, frequencies will show that emotion regulation does occur in 2-year-old classrooms.

Research Question 2:

Previous research on age differences in emotion regulation is contradictory. Some research has shown that 4-year-olds have a better grasp on regulating their emotions compared to 3-year-olds (Cole, Dennis, Smith-Simon & Cohen, 2009). In contrast, Denham et al. (2012) looked at emotionally regulated/prosocial behavior using the MPAC-R/S and found that 3-year-olds scored higher on this subscale,

compared to 4-year-olds. However, when prosocial behaviors (e.g. sharing, taking turns, and cooperating), and the emotion regulation MPAC-R/S subscales were looked at separately, it was found that results were not significant. With previous literature being unclear on the effects of age, it is predicted that as children increase in age their emotion regulation will also increase.

Research Question 3:

As children experience the preschool environment they become aware of the emotions that surround them and they learn that their feelings are internal states that they can potentially modify (Denham, 1998). For example, if a child is feeling sad because a toy was taken from him, he can use emotion regulation strategies, such as talking about the event, to help him overcome his negative affect, rather than venting. However, if a child reacts negatively to a frustrating emotional situation, such as venting his feelings through tantrums or aggression when his toy is taken from him, he is behaving in a way that is demonstrating emotion dysregulation. My last research question addresses whether age impacts emotion dysregulation. It is predicted that participants who are categorized as toddlers will show more emotion dysregulation than preschoolers.

METHOD

Participants

Data for the current study are part of a larger study, focused on teacher's socialization of social emotional learning. Children were recruited from nine private childcare centers located in Northern Virginia (N=149). In the fall of the first year of the larger study data collection occurred in 14 three-year-old classrooms and 11 four-year-old classrooms. Then during the summer of the first year of the larger study, data collection occurred in four toddler classrooms. Participants included 36 two-year olds ($M_{age} = 30.86$ mos, $SD=3.2$ mos), 65 three-year olds ($M_{age} = 41.18$ mos, $SD = 3.5$ mos), and 48 four-year olds ($M_{age} = 53.17$ mos, $SD = 3.4$ mos), with approximately half the children being male (49.7 %).

During data collection in the fall of the first year of the study, parents were asked to complete parent packets, which included a questionnaire on demographics. However, data collection during the summer did not include parent packets¹. Thus, demographics reported for the current study include only the three- and four-year-old participants.

Seventy-three percent of children were identified by their parent as Caucasian, 10.8% as African American, 10.8% as Asians, and 4.6% were identified as other. Regarding

¹ Parent packets were not included because this was a smaller study conducted under the larger study, which only concentrated on collecting child data and not parent data.

ethnicity of the sample, 6% percent of parents reported their child's ethnicity as Hispanic/Latino. Maternal education varied across the sample, 13.6% graduated from high school, 44.0% graduated with AA or BA degrees, and 42.4% attained graduate degrees. As for paternal education it was reported that 3.0% of fathers were not present in the child's life, 19.7% graduated from High School, 45.4% graduated with an AA or BA, and 31.8% attained graduate degrees.

Measures

The *Minnesota Preschool Affect Checklist-Revised/Shortened (MPAC-R/S)* is a valid observational tool used to assess children's social-emotional behavior in a natural setting, and was used to evaluate preschoolers' positive and negative emotion expression and their regulation and dysregulation of emotions (Denham et al., 2012). The MPAC-R/S consists of 18-items, which is compiled of nine subscales: positive affect (e.g., "child displays positive emotion in any manner"), negative affect (e.g. "child displays negative emotion in any manner"), production involvement (e.g., "focused use of personal energy"), unproductive involvement (e.g., "unfocused use of personal energy"), lapses in impulse control and negative responses to frustration (e.g., "child displays context-related interpersonal aggression"), positive reactions to frustration (e.g., "child promptly verbally expresses feelings arising from a problem situation, then moves on to the same or new activity"), unusual behavior (e.g., "child engages in no social interaction continuously for 3 minutes or more"), skills in leading and joining (e.g., "child smoothly approaches an already ongoing activity and gets actively involved"), Empathy (e.g., "child shares toys or other materials"). For the purpose of this study information from 4 of the 18 items

were aggregated to create emotion regulation (two items) and dysregulation (two items). Using Cronbach's alpha good internal consistency was found for emotion regulation .84. However, looking at emotion dysregulation internal consistency was only .16; possibly this extremely low alpha can be explained due to observers seeing very little context-related interpersonal aggression and object aggression during observations (see Table 1).

Procedure

Before going out in the field, observers went through training where they watched several videos that captured the different subscales of MPAC-R/S. After training, observers watched and coded 22 five-minute videos. Frequencies of codes for each observer for each scale were correlated with a master code. Since observations occurred over time, there was a possibility of more than one observer for each child. Observer reliability was assessed using the average measure intraclass correlations; these indices were .81 for emotion regulation, and .97 for dysregulation respectively.

Trained observers were assigned to Minnieland child care centers. Before collecting data, observers went to each of their assigned classrooms and spent time assisting teachers in order to form informal relationships with children and the teachers. During an appropriate time, typically a period when the class was not transitioning, children's behavior were observed in differing play and interaction contexts, and coded for 5-minute intervals across four different days. Observations occurred during less structured periods that gave children flexibility to interact and play with their peers, such as center time or free play/outside time, instead of during a teacher-led instructional time.

RESULTS

Data Description

Descriptive statistics for emotion regulation and emotion dysregulation aggregates are presented in Table 1. Overall, the children observed in the present study showed more emotion regulation than emotion dysregulation in their classrooms. Correlations were also examined between the two scales, positive reaction to frustration and negative reaction to frustration, and were found to be non-significant $r(146) = .12, p = .14$.

Research Question 1

It was hypothesized that when looking at expression of an emotion and emotion regulation/ dysregulation, frequencies will show that emotion regulation does occur in 2-year-old classrooms. To answer this question, a one-sample t test was conducted using the frequencies of both Positive Reactions to Emotionally Arousing Problem Situations and Negative Reactions to Emotionally Arousing Problem Situations subscales on the MPAC-R/S, to evaluate whether their mean was significantly different from zero. The Positive Reactions to Emotionally Arousing Problem Situations sample mean of .4167 ($SD = .56695$) was significantly different from zero, $t(35) = 4.41, p = .00$. The 95% confidence interval for Positive Reactions to Emotionally Arousing Problem Situations mean ranged from .2248 to .6085. The Negative Reactions to Emotionally Arousing Problem Situations sample mean of .1944 ($SD = .29947$) was also significantly different

from zero, $t(35) = 3.89$, $p = .00$. The 95% confidence interval for Negative Reactions to Emotionally Arousing Problem Situations mean ranged from .0931 to .2958. These results support the hypothesis that emotion regulation and emotion dysregulation occur in two-year-old classrooms and provide knowledge showing that toddlers are able to use the same strategies as 3- and 4-year-olds to regulate emotions, as well as, validating the use of the MPAC-R/S with toddlers.

Research Questions 2 and 3

It was predicted that as children increase in age their emotion regulation will also increase, and that emotion dysregulation will decrease. To test age differences on emotion regulation and dysregulation variables, a mixed-method multivariate analyses of variance was performed, with Measure (Regulation/Dysregulation) as the within-subject variable, and Age (2-year-old, 3-year-old, 4-year-old) as the between subject variable.

The results revealed that the occurrence of emotion regulation (Regulation/Dysregulation) differed within child participants, $F(1, 143) = 41.149$, $p < .00$. This main effect was moderated by a significant interaction of Age X Measure, $F(2, 143) = 3.25$, $p < .05$. Given this interaction, follow-up analyses were used to view the age differences impact on emotion regulation and dysregulation.

A one-way analysis of variance (ANOVA) was conducted to examine the differences between 2-, 3-, and 4-year-olds to determine whether age has an impact on emotion regulation and whether emotion dysregulation is seen more in toddlers than preschoolers. When examining emotion regulation the results revealed significant between group differences for children's age $F(2, 143) = 3.778$, $p < .05$. However, when

examining emotion dysregulation results revealed that there were no significant differences for children's age $F(2,143) = .549, p > .05$.

Based on the significant result on emotion regulation of the ANOVA, follow-up comparisons using Tukey's HSD was examined. The findings demonstrated that 4-year-olds showed significantly more emotion regulation in their classrooms than 3-year-olds ($p = .044$) (see Figure 1). In addition, although marginal, the same pattern was found between 4-year-olds and 2-year-olds ($p = .052$). These findings suggested that older preschoolers use emotion strategies more compared to younger preschoolers and toddlers.

DISCUSSION

The goal of the present investigation was to examine emotion regulation and dysregulation techniques displayed by 2-year-olds in their classrooms, as well as compare emotion regulation and dysregulation techniques across 2-, 3-, and 4-year olds. It was hypothesized that when looking at frequencies of emotion regulation and dysregulation, 2-year-olds would demonstrate emotion regulation strategies in their classroom. A one way *t*-test was conducted and results showed that emotion regulation does occur in 2-year-old classrooms. For example, toddlers are able to express their feelings, evoked from an emotionally arousing problem situation, and then move on to the same activity or new activity (versus withdrawing or staying upset). These results support the view that beginning around two years of age, children begin to use their own internal resources to regulate emotions (rather than relying solely on adults), and are becoming able to verbally show how emotions influence their own and others' behaviors (Cicchetti, Ganiban & Barnett, 1991; Harris, 1994; Kopp, 1989) This knowledge shows that toddlers are able to use the same strategies as 3- and 4-year-olds to regulate emotions in their classrooms.

Previous research shows that children's understanding of emotion regulation strategies develops between 3- and 4-years of age. For example, research conducted by Cole and colleagues (2009) found that 4-year-olds had a better understanding of strategies for regulating anger than 3-year-olds (Cole et al., 2009). Early on, children learn how to seek out adults help when they encounter a frustrating situation

that they need help with (e.g. crying or tantrums). As children grow older they gain the ability to manage their own emotions as well as interpret the emotions expressed by peers (Thompson & Calkins, 1996). Results from the current study showed that 4-year-olds conducted significantly more emotion regulation in their classroom than 3-year-olds. In addition, although marginal, the same pattern was found between 4-year-olds and 2-year-olds. This suggests that as children increase in age and experience with emotions they become more equipped at using emotion strategies compared to younger preschoolers and toddlers. Research has shown that children can respond to a challenging situation in multiple ways (e.g. different emotional responses to a challenge) and that age and language relate to strategy understanding (Cole et al., 2009). Since toddlers' language is only emerging during this time, it was predicted that they would show more emotion dysregulation than preschoolers. However, the results found in the present study did not indicate a significant difference in emotion dysregulation strategies between 2-, 3-, and 4-year-olds. This finding could possibly be explained due to the fact that parallel play was observed more in 2-year-old classrooms than one on one peer interactions. Thus, observers didn't have the opportunity to see emotion dysregulation, and the resultant aggregate was not internally consistent.

LIMITATIONS AND CONCLUSIONS

There are several limitations to this study. First, the sample was predominantly made up of White, middle- to upper-middle class preschoolers, as well as had an uneven number of participants for each age group. Thus, it is important to replicate these findings with a more evenly distributed, diverse sample. This change would ensure that the findings generalize to other groups. Second, the internal consistency reliabilities for MPAC-R/S, negative reaction to frustration, scale were extremely low. In future studies, controlling for whether a frustrating situation existed during the 5 minute epoch may help strengthen the support of results and alphas due to the fact that researchers would know whether observes even had the opportunity to see a negative reaction to frustration. Furthermore, further examination across preschool classrooms and contexts is also important to consider. This would allow researchers to view the impact of distinct strategy changes across emotion contexts, as well as across classrooms.

Despite limitations, the findings support the view that as children gain emotional experience and language development, they become more equipped to talk about an emotionally arousing situation, leading to more emotionally positive and successful interactions in the preschool classroom (Herndon et al., in press). In particular, results from the present study show that children who are older in age (e.g., 4-year-olds) show more frequent emotion regulation in their classrooms than younger preschoolers and

toddlers. Children who develop the ability to manage their own emotional reactions are likely to be successful in social interactions more so than children who have not developed these skills. The findings from the present study show that 2-year-olds have an emerging ability to use emotion regulation strategies. Thus, it is important to make sure the social-emotional curriculum used in preschools is incorporating 2-year-olds to support their social-emotional development.

Table1: *Descriptive MPAC-R/S Emotion Regulation/Dysregulation Aggregates across Age Groups*

		Mean	Std. Deviation	Minimum	Maximum	Possible Range
Emotion Regulation		0.5411	0.670	.00	3.00	.00-4.00
age 2		0.4167	0.566	.00	2.00	.00-4.00
age 3		0.4531	0.621	.00	2.50	.00-4.00
age 4		0.7609	0.765	.00	3.00	.00-4.00
Items	Verbally Expresses Feelings	0.1798	0.223	.00	1.00	.00-1.00
	age 2	0.1319	0.184	.00	0.75	.00-1.00
	age 3	0.1602	0.212	.00	0.75	.00-1.00
	age 4	0.2446	0.255	.00	1.00	.00-1.00
	Shows Neutral or Positive Affect	0.1027	0.165	.00	1.00	.00-1.00
	age 2	0.0764	0.116	.00	0.25	.00-1.00
	age 3	0.0703	0.129	.00	0.50	.00-1.00
	age 4	0.1685	0.217	.00	1.00	.00-1.00
Emotion Dysregulation		0.1610	0.299	.00	1.00	.00-4.00
age 2		0.1944	0.299	.00	1.00	.00-4.00
age 3		0.1328	0.270	.00	1.00	.00-4.00
age 4		0.1739	0.336	.00	1.00	.00-4.00
Items	Displays Context-related Interpersonal Aggression	0.0691	0.133	.00	.50	.00-1.00
	age 2	0.0833	0.133	.00	0.50	.00-1.00
	age 3	0.0599	0.126	.00	0.50	.00-1.00
	age 4	0.0707	0.145	.00	0.50	.00-1.00
	Shows Object Aggression	0.0120	0.053	.00	.25	.00-1.00
	age 2	0.0139	0.058	.00	0.25	.00-1.00
	age 3	0.0078	0.043	.00	0.25	.00-1.00
	age 4	0.0163	0.062	.00	0.25	.00-1.00

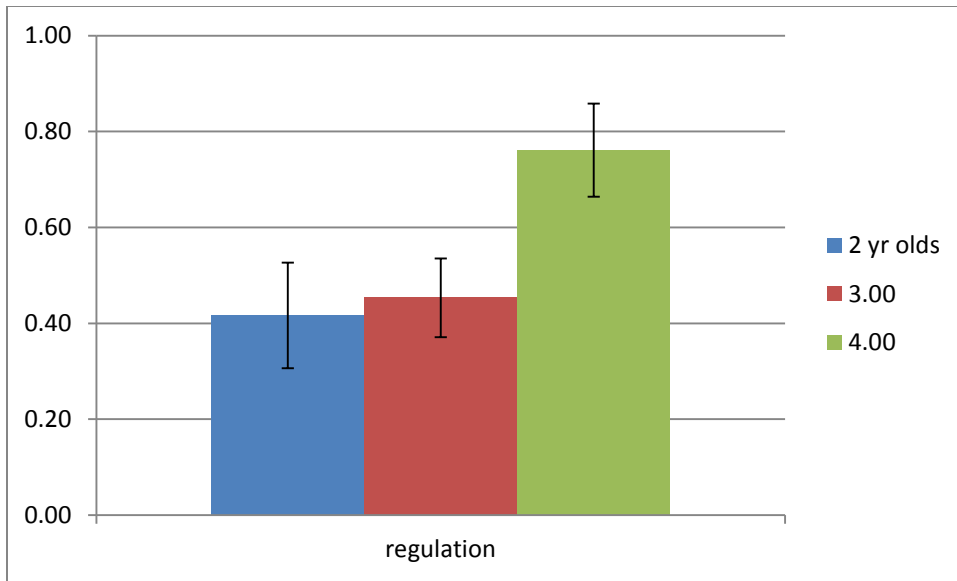


Figure 1: *Means of Emotion Regulation across Age Groups*

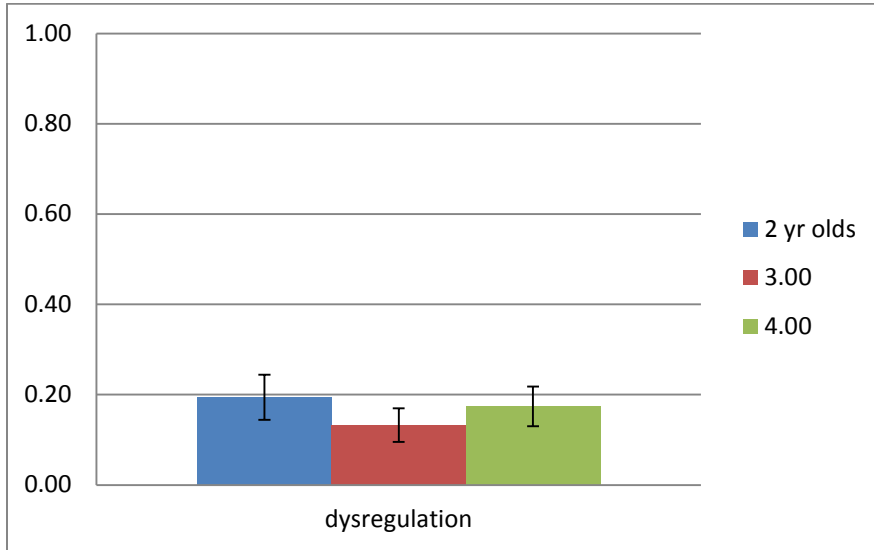


Figure 2: *Means of Emotion Dysregulation across Age Groups*

REFERENCES

- Blair, K., Denham, S., Kochanoff, A., & Whipple, B. (2004). Playing it cool: Temperament, emotion regulation, and social behavior in preschoolers. *Journal of School Psychology, 42*, 419- 443. doi:10.1016/j.jsp.2004.10.002.
- Cicchetti, D., Ganiban, J., & Barnett, D. (1991). Contributions from the study of high-risk populations to understanding the development of emotion regulation. In J. Garber & K. Dodge (Eds.), *The development of emotion regulation and dysregulation. Cambridge studies in social and emotional development*. (pp. 15-48) New York, NY, Cambridge University Press. doi: 10.1017/CBO9780511663963
- Cole, P.M., Dennis, T.A., Smith-Simon, K. E., & Cohen, L. H. (2009). Preschoolers' emotion regulation strategy understanding: Relations with emotion socialization and child self-regulation. *Journal of Social Development, 18*(2), 324-352. doi:10.1111/j.1467-9507.2008.00503.x
- Cole, P. M., Martin, S. E., & Dennis, T. A. (2004). Emotion regulation as a scientific construct: Methodological challenges and directions for child development research. *Child Development, 75*, 317-333. doi:10.1111/j.1467-8624.2004.00673.x
- Cole, P. M., Michel, M. K., & Teti, L. O. (1994). The development of emotion regulation and dysregulation: A clinical perspective. *Monographs of the Society for Research in ChildDevelopment, 59*, 73-100. doi:10.2307/1166139
- Cole, P. M., Tan, P. Z., Hall, Y. Z., Crnic, K.A., Blair, C. B. & Runze, L. (2011). Developmental changes in anger expression and attention focus: Learning to wait. *Journal of Developmental Psychology, 47*(4), 1078-1089. doi:10.1037/a0023813
- Contreras, J. M., Kerns, K. A. Weimer, B. L., Gentzler, A. L., & Tomich, P. L. (2000). Emotion regulation as a mediator of associations between mother-child attachment and peer relationships in middle childhood. *Journal of Family Psychology, 14*, 111-124. doi:10.1037/0893-3200.14.1.111
- Davis, E. L., Levine, L. J., Lench, H. C., & Quas, J. A. (2010). Metacognitive emotion

regulation: Children's awareness that changing thoughts and goals can alleviate negative emotions. *Emotion*, 10(4), 498-510. doi:10.1037/a0018428.

- Denham, S. A. (1998). *Emotional development in young children*. New York: Guilford
- Denham, S. A., Bassett, H. H., Thayer, S. K., Mincic, M. S., Sirotkin, Y. S & Zinsser, K. (2012). Observing preschoolers' social-emotional behavior: Structure, foundations, and prediction of early school success. *The Journal of Genetic Psychology*, 173(3), 246-278.
- Denham, S.A., Blair, K. A., Demudler, E., Levitas, J., Sawyer, K., Auerbach-Major, S., & Queenan, P. (2003). Preschool emotional competence. Pathway to social competence? *Child Development*, 74, 238-256.
- Denham, S. A., & Burton, R. (1996). A social-emotional intervention for at-risk-4-year-olds. *Journal of School Psychology*, 34, 225-245. doi: 10.1016/0022-4405(96)00013-1.
- Denham, S. A., McKinley, M., Couchoud, E. A., & Holt, R. (1990). Emotional and behavioral predictors of preschool peer ratings. *Child Development*, 61(4), 1145-1152. doi:10.2307/1130882
- Epstein, M.H., Synhorst, L.L., Cress, C.J., & Allen, E.A. (2009). Development and standardization of a test to measure the emotional and behavioral strengths of preschool children. *Journal of Emotional and Behavioral Disorders*, 17(1), 29-37. doi:10.1177/1063426608319223
- Fabes, R. A., Eisenberg, N., & Jones, S.....et al. (1999). Regulation, emotionality, and preschoolers' socially competent peer interactions. *Child Development*, 70(2), 432-442.
- Fantuzzo, J., Bulotsky-Shearer, R., McDermott, P.A., McWayne, C., Frye, D., & Perlman, S. (2007). Investigation of dimensions of social-emotional classroom behavior and school readiness for low-income urban preschool children. *School Psychology Review*, 36, 44-62.
- Feldman, R., Dollberg, D. & Nadam, R. (2011). The expression and regulation of anger in toddlers: Relations to maternal behavior and mental representations. *Infant Behavior & Development*, 34(2), 310-320. doi:10.1016/j.infbeh.2011.02.001
- Garner, P. W., & Estep, K. M. (2001) Emotional competence, emotion socialization, and young children's peer-related social competence. *Early Education & Development*, 12 , 29-48. doi:org/10.12307/s15566935eed12013

- Graziano, P.A., Calkins, S. D. & Keane, S. P. (2011). Sustained attention development during the toddlerhood to preschool period: Associations with toddlers' emotion regulation strategies and maternal behavior. *Infant and Child Development, 20*(6), 389-408. doi: 10.1002/icd.731
- Harris, P. L. (1994) The child's understanding of emotion: Developmental change and the family environment. *Journal of Child Psychology and Psychiatry, 35*, 3-28. doi: 10.1111/j.1469-7610.1994.tb01131.x
- Herndon, K. J., Bailey, C. S., Shewark, E., Denham, S.A., & Bassett, H. H. (in press). Preschoolers' emotion expression and regulation: Relations with school adjustment. *Journal of Genetic Psychology*.
- Kopp, C. B., (1989). Regulation of distress and negative emotions: A developmental view. *Developmental Psychology, 25*, 343-354.
- Miller, A. L., Gouley, K. K., Seifer, R., Dickstein, S., & Shields, A. (2004). Emotions and behaviors in the Head Start classroom: Associations among observed dysregulation, social competence, and preschool adjustment. *Early Education & Development, 15*, 147-165.
- Miller, A. L., Seifer, R., Stroud, L., Sheinkopf, S. J., & Dickstein, S. (2006). Biobehavioral indices of emotion regulation relate to school attitudes, motivation, and behavior problems in a low-income preschool sample. *Annals of the New York Academy of Science, 1094*, 325-329. doi:10.1196/annals.1376.043
- Schelble, J. L., Franks, B. A., & Miller, M. D. (2010). Emotion dysregulation and academic resilience in maltreated children. *Child Youth Care Forum, 39*, 289-303. doi:10.1007/s10566-010-9105-7.
- Shields, A., Dickstein, S., Seifer, R., Giusti, L., Magee, K. D., & Spritz, B. (2001). Emotional competence and early school adjustment: A study of preschoolers at risk. *Early Education & Development, 12*, 73-96. doi:10.1207/s15566935eed1201_5
- Thompson, R. A., & Calkins, S. D. (1996). The double-edged sword: Emotion regulation in high risk children. *Development in Psychopathology, 8*, 163-182.

BIOGRAPHY

Kristina J. Herndon graduated from Broad Run High School, Ashburn, Virginia, in 2006. She received her Bachelor of Sciences from George Mason University in 2011. She has been employed as a researcher for Susanne Denham's child development lab, while working on her Master of Arts in Applied Development from George Mason University.