

# Examining the Relationship of Children’s Behavior to Emotion Regulation Ability

Grace Onchwari · Jared Keengwe

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**Abstract** This study investigated the relationship between children’s ability to regulate emotions and display of appropriate behavior in social settings. A sample of 33 children representing a wide range of social economic status was randomly selected from a Head Start Program and an Early Childhood Development Center in the Midwest. Data were collected using the Emotion Regulation Checklist (ERC) developed by Shields and Cicchetti (Dev Psychol 33:906–916, 1997, J Clin Child Psychol, 27:231–395, 1998). A “Behavior Recording” checklist was developed and used to record appropriate and inappropriate behavior observed during children social interactions. Teacher ratings identified children as generally high emotion regulators. Girls had generally higher scores than boys in emotion regulation ability. A high relationship ( $r = .76$ ) was also found between emotion regulation and display of appropriate behavior. Results indicate the importance of emotions in relation to a child’s well being and academic achievement. Additionally, these findings suggest a need for parents and early childhood educators to teach children appropriate emotional behavior when confronted with situations that are in conflict with societal norms.

**Keywords** Early childhood · Emotion regulation · Emotional intelligence · Parents · Teachers · Social behavior

## Introduction

Research in brain-based learning suggests that emotional health is fundamental to effective learning. A primary element to ensuring children’s social and academic success is to understand how they learn. This understanding incorporates confidence, curiosity, intentionality, self-control, relatedness, capacity to communicate, and ability to cooperate. All these traits are aspects of emotional intelligence. **Fundamental skills of emotional intelligence are highly correlated with healthy physical, social, and emotional functioning in children** (Goleman 1997; Gottman 1997). Another important aspect of emotional intelligence is the ability to regulate emotion (Mayer and Salovey 2000). Managing one’s emotions involves being able to return to a state of balance in a reasonable amount of time when confronted with difficult emotional circumstances. This could happen if one is able to regulate his emotions.

Emotions facilitate thinking and influence behavior. Studies by LeDoux (1994) suggest that emotional intelligence is strongly associated with social well-being. His research has been revolutionary for understanding human emotions. Emotional intelligence, at first, was defined as “the ability to monitor one’s own and others’ feelings and emotions, to discriminate among them, and to use this information to guide one’s thinking and action.” (Salovey and Mayer 1990, p. 189). Later, Mayer and Salovey (1997) redefined emotional intelligence as “the ability to perceive accurately, appraise, and express emotion; the ability to access and/or generate feelings when they facilitate thoughts; the ability to understand emotion and emotional knowledge; and the ability to regulate emotions to promote emotional and intellectual growth” (p. 10).

Social scientists are just beginning to uncover the relationship of emotional intelligence to other phenomena,

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G. Onchwari · J. Keengwe (✉)  
Department of Teaching and Learning, University of North Dakota, Grand Forks, ND 58202, USA  
e-mail: jared.keengwe@und.edu

G. Onchwari  
e-mail: grace.onchwari@und.edu

such as leadership (Ashforth and Humphrey 1995), group individual performance, interpersonal/social exchange, and managing change (Goleman 1997). Higher levels of emotional intelligence are also associated with better performance in work related areas. Children actively engage in social interactions with peers, adults and environments that often require them to display their ability to regulate their emotional experience. Emotion regulation may influence a specific emotion a child is experiencing. For example, a child may use emotion regulation processes to arouse a specific emotion, such as empathy, when watching another child fall down (Thompson 1994).

Thompson (1994) described emotion regulation as “the extrinsic and intrinsic processes responsible for monitoring, evaluating, and modifying emotional reactions, especially their intensive and temporal features, to accomplish one’s goal” (p. 28). Emotions are regulated to adapting them to meet life’s demands (Walden and Smith 1997) and include a range of processes that serve to “avoid, displace, transform, minimize, inhibit, or intensify emotions” (Campos et al. 1994, p. 296). Eisenberg et al. (2004) viewed “emotion-related regulation as the process of initiating, avoiding, inhibiting, maintaining, or modulating the occurrence, form, intensity, or duration of internal feeling states, emotion-related physiological processes, emotion related goals, and/or behavioral concomitants of emotion, generally in the service of accomplishing one’s goals”(p. 260). In summary, “emotion regulation is not a single behavior, but a varied collection of processes and strategies” (Fujiki et al. 2002, p. 103).

### Purpose of the Study

During the preschool years, children often are confronted with situations requiring the regulation of emotional experience. Such diverse situations require that a child modulate emotion for optimal social functioning (Thompson 1994). As early childhood educators, there is need to understand the relationship between children’s ability to regulate emotion and their ability to display appropriate social behavior in order to plan for effective ways to enhance children’s emotional intelligence. Goleman (1997) noted:

Individuals who are high in emotional intelligence are socially poised, outgoing and cheerful, not prone to fearfulness or rumination. They have a notable capacity for commitment to people or causes, for taking responsibility, and for having an ethical outlook; they are sympathetic and caring in their relationships. (p.45)

In the past, researchers have investigated various dimensions of emotional intelligence, such as social skills,

interpersonal competence, emotional awareness and maturity. Preschool teachers have taught the rudiments of emotional intelligence, such as “social development” and “social emotional learning” to young children. Limited parental knowledge related to the developmental progression of self-regulation and emotion regulation poses a challenge for educators and parents at the preschool level (Boyer 2009). Therefore, the purpose of this study was to investigate the relationship between children’s ability to regulate emotions and display of appropriate behavior in social settings. The study findings might help early childhood educators to explore effective ways to support children to build self-esteem, inspire confidence and foster positive behavior in young children. The findings would also have implications for fostering emotional intelligence in young children to enhance their well being and academic achievement.

### Methodology

The study investigated children’s emotion regulation ability, gender effects and the relationships of children’s emotion regulation and behavior. The study was based on the premise that if we are able to help children appraise their emotions, understand how emotions can alter a person’s thinking, empower their emotional knowledge, and promote emotional growth, then we are able to help them control their emotions and understand how to manage their behaviors.

### Research Questions

Three research questions guided this used:

1. What is children’s emotion regulation ability?
2. Are there gender differences in children’s emotion regulation ability?
3. Does children’s emotion regulation ability relate to appropriate or inappropriate behavior?

### Sample

The thirty three children participants were from a Head Start program and an Early Childhood Development Center located in a small Midwest town. Two classrooms of 3–5 year olds from each program participated. The sample represented a wide range of family social economic statuses. Children from the Head Start program came in large part from lower socioeconomic families and children from the Early Childhood Development Center came from middle-income families. The study was carried out during the summer period which reflects the low enrollment of the

classrooms that were studied. Two open summer classes during the time of data collection participated in the study. Thirteen children from the Head Start center and 20 children from the child development center participated in the study.

The classroom teachers signed the consent forms to participate in this study. Parental consent forms were also signed to allow the researchers to videotape children's social interactions during play and daily activities. The directors of the two centers (Head Start program and the Early Childhood Development Center) were contacted by email and requested for permission to conduct this research in their center. After getting approval from the researchers' University Institutional Review Board (IRB), and permissions from both directors of the programs, and the classroom teachers of the participating classes, the study was carried out.

#### Assessment Instrument: The Emotion Regulation Checklist (ERC)

A 25-item Emotion Regulation Checklist (ERC, Shields and Cicchetti 1997, 1998) developed by Fujiki et al. (2002) was used to assess emotion regulation of children. Each item in ERC checklist is rated on a 4-point Likert scale (1 = never and 4 = almost always). Examples of items in the tool are: \_\_\_ is a cheerful child, \_\_\_ exhibits wide mood swings (child's emotional state is difficult to anticipate because s/he moves quickly from a positive to a negative mood), \_\_\_ is easily frustrated, etc.

The ERC is designed to be completed by an adult who knows the particular child well. In this study, the teacher and teacher assistants completed the ERC form. Teachers were individuals who knew the children well and interacted with them on a daily basis. The teachers were also individuals who had worked with the children for at least a year and were therefore deemed to know their students well. All the four teachers were white Caucasian. The two teachers were qualified individuals with a bachelor's degree in early childhood education; the teaching assistants had their CDAs (Child Development Associate).

#### Videotape Behavior Recording Form

For purposes of recording children's appropriate and inappropriate behavior, the researchers created the "Videotape Behavior Recording" form. Children were videotaped 3 days a week for 10 min each in the different activities in the classrooms (group activity, free play, and outdoor play). The three segments (10 min each in group activity, free play, and outdoor play settings) from the recorded videotapes were reviewed. Charting of the number of appropriate and inappropriate behaviors displayed was recorded accordingly.

Frequency recording was used; each time the researchers noticed the child exhibiting the behavior within the research study, the researchers tallied accordingly. A simple counting system of how many times appropriate or inappropriate behavior occurred during the designated 10 min period of time was used as the basis for adding up the most type of behavior displayed by that particular child. This was later transferred as a whole score to be used in analysis for each child. For example, if child A showed verbal behaviors such as shouting, yelling, crying six times, this was tallied respectively.

Children's behaviors were categorized as either physical (e.g. hitting, poking others), or verbal (shouting, crying or yelling at others). The physical and verbal behaviors were further categorized into appropriate physical (for example assisting others, working together, sharing), inappropriate physical (point fingers at others, throwing things, making faces, holding things to self, looking at others harshly, grabbing, fighting, intervening in others' play, ignoring others, pushing, pulling etc.), appropriate verbal (asking for turns, asking friends to help, asking to join group, letting others know what s/he likes or not, giving suggestions), and inappropriate verbal (screaming, shouting, yelling, crying, directing, dismissing friends work, laughing at others, calling names, etc.) behaviors.

#### Data Analysis

Before analysis of the data, all items that were reversed in the ERC checklist were re-reversed; items such as "is easily frustrated" if a teacher rated the child with a 4 that meant a 1 which is not a good emotion regulator and vice versa. Since a score of 4 meant a high emotional regulator it was important that reversed items were tallied appropriately. Since there were two teachers rating children's ability to regulate emotion, both teacher ratings for each child were summed up and divided by two to get a score for each child in each item. These scores were added up and the sum was divided by 25 the number of items in the emotion regulation checklist. A score for each child was obtained that ranged between 0 and 4 with a higher score indicating better emotion regulation.

Data from the videotapes were transcribed accordingly. Researchers viewed the tapes and used the behavior recording form to note the type of behavior displayed and how many times this behavior was displayed by each child. Each child was observed in the videotape and the video recording form was used to tally the number of times the child engaged in the behavior. Scores were compared by the two researchers. Where wide disparities were noted, the tapes were reviewed and the necessary corrections made.

Three sets of data/scores were obtained: mean overall scores produced from teacher ratings on the ERC, scores

for appropriate behavior, and scores for inappropriate behavior. An analysis of variance (ANOVA) was used to determine if there were significant differences in children's emotion depending on gender. A simple linear regression was used to identify if there was a direct relationship between emotion regulation ability and children's display of appropriate or inappropriate behavior.

## Results

### Research Question One: What is The Children's Ability to Regulate Emotion?

The mean scores from the ERC obtained from the teacher ratings of children in the three classes are presented in Table 1. Overall mean scores on children's ability to regulate emotion ( $M = 3.178$ ,  $SD = .64$ ) ranged from 3.13 to 3.21. According to the overall mean scores of teachers' rating, it was evident that girls had a slightly higher mean score ( $M = 3.21$ ,  $SD = .72$ ) than boys ( $M = 3.13$ ,  $SD = .55$ ). Overall, teachers rated children as high emotion regulators. The scores ranged from 0-4, with a higher score indicating better emotion regulation.

### Research Question 2: Does Gender Have an Effect on Children's Ability to Regulate Emotion?

A one-way analysis of variance (ANOVA) was used to determine if there were significant differences in emotion regulation across children's gender. The overall ERC score acted as the dependent variable and the gender (male or female) as the independent variable at an alpha level of .05. Non significant gender differences were obtained  $F(1, 31) = .62$ ,  $p > .616$ . The mean however indicated that girls had a slightly higher mean than boys in emotion regulation ability. A one way ANOVA was run again with emotion being the dependent variable and age as the independent variable. Significant differences were obtained

**Table 1** Overall mean ERC scores (and standard deviations) of children both female and male

Gender	ERC Score	
	M	SD
Male	3.13 (3.1)	.54
Female	3.23 (3.2)	.74
Average	3.19 (3.2)	.65

Scores range from 0 to 4, with a higher score indicating better emotion regulation ability

$N = 33$

**Table 2** ANOVA differences in gender and age

Variable	Emotion regulation		
	df	F	Sig.
Gender	32	.257	.616
Age (3 years:4–5 years)	32	17.03	.001

across the age groups  $F(1, 32) = 17.03$ ,  $p < .001$ . Specific aspects of emotion regulation were looked into across the two groups as illustrated in Table 2.

### Research Question 3: Is There a Relationship Between Children's Ability to Regulate Emotion and Their Ability to Display Appropriate or Inappropriate Behavior?

Table 3 shows the correlation coefficient scores on the ability to regulate emotion and ability to display appropriate or inappropriate behavior in relation to emotion regulation. To determine if ability to display appropriate or inappropriate behavior was related to emotion regulation, the overall emotion regulation score was correlated with the scores from the video tape recording form. The correlations observed ranged from  $r = .146$  to  $r = .430$ . The correlations were somewhat weak. When the variable gender was included it was evident that there were some slight relationships. The relationship between inappropriate verbal and emotion regulation among girls was higher ( $r = .430$ ) as compared to the boys ( $r = -.302$ ). The relationship was negative for males and positive for females. There was a slightly higher relationship between ability to display appropriate physical behavior ( $r = .248$ ) and emotion regulation among boys than girls ( $r = .212$ ). It was also found that there was a negative relationship between display of inappropriate verbal behavior ( $r = -.302$ ) and emotion regulation among boys than girls who had a positive correlation ( $r = .430$ ). A summary of this information is provided in Table 3.

**Table 3** Pearson correlation coefficient scores on ECR and behavior

Behavior	ERC		
	Overall (r)	Male (r)	Female (r)
Appropriate physical	.248	.212	.226
Appropriate verbal	.165	.227	.211
Inappropriate physical	.165	.227	.211
Inappropriate verbal	-.302	.430	.146

$N = 33$

## Discussion

The importance of fostering emotional intelligence in young children continues to receive emphasis in the education field. Sullivan and Lewis (2003) acknowledged the important relationship between children's ability to understand and manage emotions to academic achievement, peer relations, and overall health. Sullivan further contended that children who lack emotional intelligence often misinterpret their own emotions as well as those of others. Hyson (1994) identified the fact that many children are growing up in environments that compromise their emotional developments such as, witnessing uncontrolled violent models of emotion expression in homes, communities, and the media. In such situations, parents find it difficult to meet their children's emotional needs. Consequently, early childhood educators play a key role in influencing positive behavior as well as appropriate emotional development of the children. This study related the child's ability to regulate emotion to child's ability to display appropriate behavior. Higher ability to regulate emotion was an effective predictor of a higher score on display of appropriate behavior. Overall results showed that teachers rated children high ( $M = 3.19$ ) on ability to regulate emotions. Girls are identified as slightly better emotion regulators ( $M = 3.21$ ) than boys ( $M = 3.13$ ), even though the means scores were within narrow ranges.

Results from this study support the use of the different social skill training programs already in use in most early childhood programs. It is possible not to rule out biasness as teacher ratings could have been influenced by fear of their teaching effectiveness being challenged. It is also possible that teacher ratings were based on the judgments of their emphasis on emotion regulation in their daily activities.

Findings from this study revealed gender differences on emotion regulation ability. Similar findings were reported by Brenner and Salovey (1997). Lack of no main gender effects on emotion regulation ability could be due to the fact that the sample was widely composed of children from different backgrounds (low and high socio economic status). These two groups were quite different on age and social economic status. Looking at the overall mean score for emotion regulation for both boys ( $M = 3.13$ ) and girls ( $M = 3.21$ ), the slight difference could explain why gender may have not had a major effect on emotion regulation ability.

A relationship between appropriate verbal and emotional regulation ability was found to be slightly 'higher' for girls ( $r = -.227$ ) than for boys ( $r = .165$ ). A relationship between inappropriate verbal behavior and emotion regulation ability was higher for girls ( $r = .430$ ) than for boys ( $r = -.302$ ). A relationship between appropriate

physical and emotional regulation also revealed that male had a slightly 'higher' ( $r = .248$ ) relationship than girls ( $r = .212$ ). On the other hand, in assessing the relationship between inappropriate physical and emotion regulation, the results showed that girls had a slightly 'higher' ( $r = .227$ ) relationship than boys ( $r = .165$ ).

While research indicates that girls develop language skills faster than boys, the findings from this study reveal that girls could be putting their verbal skills to inappropriate use. As a result, it is possible that children may not be generally aware of the appropriate words to use when challenged with many social situations that require their reaction and thus resort into physical actions when faced with confrontations. Boys, on the other hand, engage more in inappropriate physical behaviors than inappropriate verbal behaviors—boys express themselves in physical ways. This could be attributed to the fact that boys may not have developed language skills required to do so or boys' tendency to adopt male gender role stereotypes can contribute to the way they believe they should react. This reflects on their behavior towards each other.

## Implications

The role of emotion and its regulation in social competence has been of considerable interest (Garber and Dodge 1991). Children react to different situations in different ways, but even with these differences, the way they manage their emotions must be socially appropriate. If not, the after effects of their behaviors could be devastating. Teaching children to manage emotions directly relates to the behavior they demonstrate. Showing inappropriate behavior has often been related to emotion regulation. Traditionally teachers, parents, guardians, and service providers identify students as having behavior problems when they find their behaviors are in conflict with societal norms (Obiakor and Algozzine 1995).

The findings indicate the importance of emotions in relation to a child's well being and academic achievement. The findings suggest a need for parents and early childhood educators to teach children appropriate emotional behavior when confronted with situations that are in conflict with societal norms. Izard et al. (2001) reiterate the need for enhancing emotion knowledge and emotion regulation early in children's development in order to help children understand and know how to get along with their peers and even perform well in schools. Further, they found that emotion knowledge as a predictor of social and academic competence in later years can be enhanced during a child's early years.

The lack of support and understanding by early childhood educators to address the needs of children with

behavior problems (Boyer et al. 2006) implies a need for children to be taught how to self-manage their behaviors as well as expose them to novel situations to help them learn to solve conflicts. Early childhood educators and staff working with young children could scaffold children's emotional intelligence through children's literature, social skills training, and even social literacy programs.

Preschoolers need time to learn, use materials properly; consider safety issues for themselves and others; understand how others self-regulate, and decide when to self-regulate within many varied learning and living contexts. Increasing emotional knowledge and emotion regulation early in children's development will enhance the development of social skills and influence how children get along with their peers which could also influence children's academic performance. Therefore, early childhood educators and parents must strive to provide consistent care and foster a feeling in children of social and emotional security and safety within and across varied learning and living environments that are likely to translate to positive development of self-regulation (Boyer 2008).

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