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Emotion Regulation in Ghanaian and American Children: Associations with Internalizing and Externalizing Behaviors

Ellen Claire Anderson

College of William and Mary

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Emotion Regulation in Ghanaian and American Children: Associations with Internalizing and Externalizing Behaviors

A thesis submitted in partial fulfillment of the requirement for the degree of Bachelors of Arts in Psychology from The College of William and Mary

by

Ellen Claire Anderson

Accepted for Highest Honors

Dr. Janice Zeman, Director

Dr. Catherine Forestell

Dr. Anne Charity-Hudley

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Abstract

Children’s emotion regulation (ER) ability has been shown to influence psychosocial development, but this research has relied primarily on data from Western cultures. Given the important influence of culture and context on emotion processes, the current study examined ER behaviors (i.e. coping, inhibition, dysregulation) and associations with internalizing and externalizing behaviors in Ghanaian and American youth. Participants were 142 children from Ghana and 147 children from the United States, ages 8-15, who completed the *Children’s Emotion Management Scales* (CEMS) for sadness and anger, emotion frequency scales, the *Children’s Depression Inventory Short Form* (CDI-S), and the Aggression subscale of the *Youth Self-Report* (YSR) form of the *Child Behavior Checklist*. Univariate and multivariate analyses of variance and hierarchical regressions examined effects of nationality, gender, and age group. Nationality differences emerged, such that the overt expression of sadness and anger was reported with greater frequency in Ghana and the effortful control of sadness was reported with greater frequency in America. Regression analyses indicated that the inhibition of anger predicted to depressive symptomatology in American but not Ghanaian children, and that the dysregulation of anger predicted to aggressive behaviors in both countries. Significant gender and age findings were most pronounced for the experience of sadness and in associations between ER and mental health.

*Keywords*: emotion regulation, depressive symptoms, aggressive behaviors, Ghana
Emotion Regulation in Ghanaian and American Children: Associations with Internalizing and Externalizing Behaviors

The development of emotion regulation (ER) abilities is crucial to children’s social competence (e.g., Hubbard & Coie, 1994; Sroufe, Schork, Motti, Lawroski, & LaFreniere, 1985), interpersonal relationships (e.g., Saarni, 1999; Underwood, Hurley, Johanson, & Mosley, 1999), and overall psychological well-being (e.g., Bradley, 2000; Eisenberg et al., 2001). Culture contributes to ER development by influencing emotion experience, expression, and regulatory behaviors (Mesquita & Frijda, 1992). Knowledge about appropriate emotion displays is acquired through interactions with family members, peers, and community members (Bronfenbrenner, 1994; Saarni, 1989). Thus, the emotion socialization of children from different cultures will vary. For example, children in African countries experience a significantly different cultural and social environment than children in the United States—a disparity likely to impact their emotional development (Saarni, 1999).

Despite the significance of emotion management in children’s healthy psychosocial development and the recognition that culture contributes to emotional development, few studies have examined links between ER and mental health in non-Western cultures. As such, the current understanding of ER behaviors in relation to child outcomes is limited by a monocultural perspective. The primary aim of this study was to investigate emotion management in Ghanaian and American children and examine differences in the associations between ER behaviors and internalizing and externalizing problems. Sadness and anger regulation were investigated in relation to symptoms of depression and aggression. The following literature review provides a description of ER, the variables that influence emotion development, and empirical evidence linking ER to internalizing and externalizing behaviors. Findings are presented from emotion
research that has explored emotional expression, ER behaviors, and links between ER and mental health across cultures. Next, the need for cross-cultural research in emotion is offered, followed by a specific investigation of the emotion experience in Ghana. The final section outlines the goals and hypotheses of the present study.

**Emotion Regulation**

Defining ER has been a difficult and controversial endeavor, as different researchers conceptualize and emphasize different components of the process. Currently, a widely cited definition is that by Thompson (1994), who describes ER as “…the extrinsic and intrinsic processes responsible for monitoring, evaluating, and modifying emotional reactions, especially their intensive and temporal features, to accomplish one’s goals” (pp. 27-28). Another definition by Cole, Michel, and Teti (1994) defines ER as “the ability to respond to the ongoing demands of experience with the range of emotions in a manner that is socially tolerable and sufficiently flexible to permit spontaneous reactions as well as the ability to delay spontaneous reactions as needed” (p. 76). More specifically, Eisenberg and Spinrad (2004) define ER as “the process of initiating, avoiding, inhibiting, maintaining, or modulating the occurrence, form, intensity, or duration of internal feeling states, emotion-related physiological, attentional processes, motivational states, and/or the behavioral concomitants of emotion in the service of accomplishing affect-related biological or social adaptation or achieving individual goals” (p. 338).

Despite their differences, there are common threads that link these three definitions. First, each emphasizes the use of ER processes in goal achievement. The authors reference meeting demands or functioning adaptively in the social world, suggesting that the dysregulated expression of emotion is counterproductive to accomplishing goals both individually and when
interacting with others. To illustrate this point, imagine an individual in the workplace who has difficulties regulating his frustration and anger. When a conflict arises between him and another co-worker, or when a task becomes challenging, this individual may become so distracted by his emotions that he cannot concentrate or he may express his anger inappropriately and thus alienate himself from his peers. His inability to regulate his anger adaptively will undoubtedly result in the inability to complete his work and accomplish his goals.

Second, each definition discusses ER as a process in which emotion is modified or modulated. Key to this description is the acknowledgment that emotion is not just regulated through inhibition, control or suppression, but may also be maintained or enhanced, depending on the situation (Zeman, Cassano, Perry-Parrish, & Stegall, 2006). In one scenario, an adaptive ER strategy may be suppression, in another, the enhanced expression of an emotion may be more appropriate. For example, consider the emotion of happiness. It may be important for a child to mildly inhibit the expression of happiness when she wins a one-on-one basketball game in order to display good sportsmanship. However, when that child loses the next game, it may be important that she enhance her expression of happiness as she congratulates her opponent. It is important to note that this is a very simplified example as true ER involves the organization and modification of many emotions at once.

Finally, there are two important points that are not mirrored consistently in all definitions, but are essential to ER. First, as Thompson (1994) states, ER is composed of both intrinsic and extrinsic processes. In other words, emotional expression is not just self-regulated and controlled, but is also influenced by family, community, and culture through the process of socialization. Second, ER involves managing the frequency, duration, and intensity of an emotion or the “dynamics” of emotional expressivity. Regulation does not only determine
whether or not the emotion is expressed, rather it pertains to the length of time and degree of expression. These conceptualizations of ER reveal its multifaceted and multidimensional components that interact with environment and context.

Based on the definitions described, it is no wonder that the ability to regulate emotions plays a crucial role in children’s psychological functioning and social development (Saarni, 1999). From an early age, children are directly and indirectly taught ER strategies, but how are these strategies acquired? Parents and caregivers are likely to have the largest role in shaping early ER skills, as children experience their worlds largely through those of their home environment and experiences.

**Socialization of emotion.** According to Zeman et al. (2006), parents and caregivers contribute to their children’s emotional development through both direct and indirect socialization. Direct socialization is achieved through didactic instruction when ER is the focus of the conversation and parents directly teach their children how to behave. When caregivers and children spend time talking about emotions and emotional expression, children develop an understanding of appropriate expression, how to identify emotions, and when and how to regulate negative affect. Second, children are directly socialized when they experience an emotion and their caregivers help them through the experience, talk with them about their feelings, and provide emotional support.

On the other hand, caregivers indirectly socialize by modeling emotional behavior. Their facial and verbal expressions, coping behaviors, and unique reactions to emotional situations influence their children's emotional competency. Additionally, when caregivers reinforce behavior through reward or punishment they are indirectly shaping children's emotional development. For example, if a child's crying behavior is reinforced by receiving attention from
the caregiver, that child may begin to view crying as an adaptive emotional behavior that elicits a positive response.

It is important to note that the use of these methods of emotion socialization does not guarantee the development of adaptive ER strategies. In other words, a child could be socialized to develop maladaptive ER. For example, when caregivers socialize children during conversations with their child about a current emotional experience, they may adopt an emotion-coaching or an emotion-dismissing approach. Caregivers who practice emotion-coaching are more likely to help their children constructively regulate their emotions (Gottman, Katz, & Hooven, 1997). These caregivers are more aware of their child's emotions, help their child determine the emotion they are feeling, problem-solve constructive behavior management with their child, and understand that the experience of negative affect is okay. Caregivers who practice emotion-dismissing approaches do not demonstrate the same awareness of their child's emotions, are unable to help the child label emotions, dissuade negative affect, and try to change their child's emotion instead of teaching their child how to do so (Gottman, Katz, & Hooven, 1997). Emotion-dismissing is less likely to lead to adaptive emotion development. Adaptive development is influenced by caregivers' own personal acceptance, understanding, and expression of emotion. Individual differences in parental emotional knowledge and expression, and differences in parents' individual cultures contribute to their children's emotional socialization.

In addition to learning ER strategies from their parents, children later learn strategies in school, from their peers, and in the community. As a result, the development of ER is largely influenced by a child's social environment. Researchers have documented unique gender and age
trends, further supporting the belief that emotional development is a process heavily influenced by the norms, values, and gender roles of individuals in specific societies and cultures.

**Gender.** The genderized expression of emotion has roots in early development. In a study by Cole (1986), children between the ages of 3-9 were assessed for their ability to spontaneously control negative emotion. Children were presented with a “disappointing” situation. They were then assessed for their knowledge of emotion labels and expressive control, and their spontaneous facial expressions and verbalizations when an emotion was elicited were observed. Findings revealed that children as young as three and four years old could control the display of negative emotion. Types of control differed by gender, with girls substituting an exaggerated display of positive emotion in negative situations (e.g., by displaying a fuller smile) and boys substituting more neutral expressions (e.g., by displaying a smile of lesser magnitude). This study demonstrated that methods of regulation and expression of emotion vary by gender, beginning at young ages. When controlling emotion, boys tend to neutralize their emotional expressions, whereas girls are more likely to substitute one emotional display for another, a trend that continues throughout development (Zeman et al., 2006).

By middle childhood, gender differences in emotion expression are well established, and in Caucasian samples, boys and girls appear to be socialized to manage their anger and sadness in different ways (e.g., it is more acceptable for girls to cry; Brody, 2000; Kerr & Schneider, 2008). In a study by Zeman and Garber (1996), the ER strategies of 64 children (primarily Caucasian and middle class) in grades one, three, and five were assessed. Data were collected through individual interviews in which emotion-evoking stories were read to the children, followed by questions concerning the control and expression of emotion. Variables included emotion type (sadness, anger, pain), audience (mother, father, peer, alone), gender, and age.
Children reported on their reasons for controlling or expressing certain types of affect, the perceived acceptability of their emotional expressions, and an understanding of emotion displays. Clear gender differences were revealed. Namely, girls reported that they would express feelings of sadness and pain more than boys, particularly to mothers in comparison to fathers and peers. Boys reported that they did not express these emotions due to expectations of negative interpersonal consequences (e.g., teasing, ridicule) following an emotional display. In terms of expression strategies, boys reported using aggression more than girls, especially when expressing anger, but also during the expression of sadness, whereas girls reported more affective responses (e.g., crying) and verbalizing their emotional experiences (e.g., talking about their feelings) more than boys.

A related study (Underwood, 1997) investigated children's understanding of the regulation of positive and negative emotion in 368 children in grades two, four, and six. Participants were predominantly European American (85%) from lower- to middle-income families. The variables of age, gender, and peer social status were measured as children completed a Social Emotions Questionnaire. The types of affect evaluated were happiness, pride, sadness, disappointment, embarrassment, and anger. Children of both genders reported controlling the expression of negative emotions more than the expression of positive emotions. However, girls anticipated more negative reactions from peers than did boys concerning the expression of these negative emotions.

Research indicates that parents do in fact socialize their children to express emotions differently based on gender. Garside and Klimes-Dougan (2002) conducted a study investigating university students' \( M_{\text{age}} = 19.0, SD = 1.70, 75\% \) European American, 5.3\% African American, 7.8\% Asian American, 8.7\% Latino/a, and 1.6\% unspecified ethnicity) retrospective accounts of
parental emotion socialization patterns in response to children's expression of negative emotion. Results indicated that fathers were perceived to reward girls for expressing sadness and fear, while punishing boys for doing the same. Mothers' socializing patterns contributed to the same outcomes, however, mothers were described as being more likely to distract or override their sons' than daughters' expressions of sadness, and thus reinforce fewer displays of this emotion. In addition to the finding that parents expect boys to suppress the emotions of sadness and fear more than girls, research also posits that parents expect girls to inhibit expressions of anger (Zahn-Waxler, 2000; Zeman et al., 2006).

**Developmental trends.** Emotion socialization begins early, and as children age they become more aware of society's expectations for what is considered acceptable emotional expression. Kalpidou, Power, Cherry, and Gottfried (2004) examined ER in children aged three and five years. The researchers determined that by age five, children were more emotionally comfortable and demonstrated more advanced ER skills than children at age three. As children grow older, regulation of emotion is further influenced by emotion type. Results from a previously cited study of children in grades one, three, and five indicated that younger children reported expressing the emotions of sadness and anger more than did older children (Zeman & Garber, 1996). Furthermore, a study by Brown, Covell, and Abramovitch (1991) found that older children were significantly better at generating cognitive emotion control strategies for all types of emotion than were younger children. These findings are explained by older children's increased awareness that negative emotions are met with fewer positive responses. Finally, in adolescence, children fully grasp the social consequences of their behaviors and at this time they consistently differentiate their emotional expressions in front of parents versus peers and males versus females (Zeman et al., 2006).
To account for these trends, Brenner and Salovey (1997) posit that as children's knowledge of emotion increases so too do their regulatory skills. They propose that there are three age-related trends in the development of ER. First, as children age, their use of internal, cognitive, and emotion-focused strategies increase when they are faced with emotionally demanding situations. Specifically, older children are better able to modulate and directly manage the negative emotions that arise from a problem, instead of just attempting to manage the problem itself. Second, older children are more able to utilize solitary strategies of ER effectively. They are able to regulate their emotions without the assistance of others, namely without parental assistance. Finally, as children mature they are able to manage stressful emotional circumstances with greater flexibility because they can recognize controllable versus uncontrollable stressors and match effective regulatory strategies to best respond to each. Saarni (1997) further suggests that older children (10 years of age) are better able to generate emotion coping solutions in problematic situations due to their exposure to varied social models, a broader range of emotion-social experience, and their growing cognitive sophistication.

In sum, research indicates that children's ER strategies vary by age and gender. Beginning in early childhood these trends are apparent and differ depending on the type of emotion expressed. Girls report expressing their sadness and fear more than boys do, and boys report expressing their anger more than girls. Older children report expressing fewer negative emotions than younger children as well as a more advanced understanding of socially acceptable expression. Taking these differences into account, it is next important to consider how ER contributes to the psychological development of the child.

**Internalizing and externalizing behaviors.** Emotion regulation processes play a key role in psychological health as ER is a core constituent of emotional adjustment (Cicchetti,
A growing body of literature has begun to examine the nature of deficits in ER skills and their specific linkages to psychological functioning. Most research has examined the ER processes in relation to internalizing or externalizing problems.

Research by Eisenberg et al. (2001) considered parent-report measures of ER in children (predominantly Caucasian) aged four to eight, and found links between specific ER strategies and internalizing or externalizing symptoms. Children who exhibited high levels of involuntary emotion control (defined by low impulsivity and high behavioral constraint) also exhibited higher numbers of internalizing symptoms. Children who exhibited low effortful regulation and high impulsivity had higher rates of externalizing symptoms. Furthermore, according to Zeman et al. (2006), children in middle childhood with internalizing symptoms are more likely to exhibit poor emotional self-awareness, maladaptive coping with anger, anger inhibition, and inappropriate expression of anger and sadness. Children with externalizing problems are more likely to express anger, be impulsive, and exhibit poor anger coping skills and sadness inhibition.

Research by Garnefski, Kraaij, and va Etten (2005) further supports these associations in an adolescent population. Caucasian adolescents were screened for internalizing and externalizing problems using the Child Behavior Checklist, and their ER strategies were investigated through self-report. The data indicated that participants who reported higher levels of self-blame (putting the blame of what one has experienced on themselves), higher levels of rumination (repeatedly thinking about the feelings associated with the negative event), and lower levels of positive appraisal (viewing the event as positive in terms of its potential to contribute to personal growth) were more likely to have internalizing problems. The ER strategies that predicted externalizing problems were other-blame (blaming another person or the environment) and positive refocusing (redirecting thoughts away from the actual issue to more happy or
pleasant issues). These findings suggest that adolescents who use less effective ER strategies are more likely to develop maladaptive disorders; a finding supported by Silk, Steinberg, and Morris (2003) who found a similar link when assessing depressive symptoms in adolescents.

Finally, Eisenberg, Hofer, and Vaughan (2007) discussed the over- and under-control of emotion in relation to mental health. They outlined a heuristic model which included 3 styles of emotion control: optimal control, over-control, and under-control and their respective associations with socioemotional development. Individuals who are optimally controlled and well-regulated respond flexibly to the varying demands of daily life and respond with a range of emotional expressivity that is socially acceptable (e.g., moderate intensity of emotional expression for a short duration). Understandably, this type of regulation contributes to healthy development. On the other hand, individuals who over-control their emotions are prone to developing internalizing problems whereas individuals who under-control their emotions are prone to developing externalizing problems.

In considering internalizing problems and strategies that lead to depressive symptoms, overregulation or control appears most salient. Durbin and Shafir (2008) suggest that this may be because the overregulation of emotion deprives children of important learning experiences that the expression of an emotion may provide. Abe and Izard (1999) discuss this idea in relation to the emotion of anger. They posit that when an individual expresses anger, he may simultaneously acquire skills in perspective taking, social negotiation, and assertiveness development. However, when anger expression is overregulated, individuals miss out on acquiring these strategies that might bolster resilience to the development of depressive symptoms.

Additionally, overregulation can prevent the full development of interpersonal skills and social cognition, thus posing a higher risk for internalizing disorders. Overregulation may make
it more difficult for children to engage in other emotion regulatory processes. Muraven and Baumeister (2000) describe ER as a facet of self-regulation—a process that has a finite capacity. There is a limited amount of energy that can be directed to ER before other regulatory processes become deprived. The excess energy involved in overregulation may make it difficult to manage the other psychological processes necessary for healthy functioning.

In considering the development of externalizing problems, a key aspect, in addition to underregulation, is emotion dysregulation. According to Cole, Hall, and Radzioch (2009), emotional dysregulation describes the aspects of an individual's emotional functioning and display that are culturally ineffective, inappropriate, or compromise the accomplishment of developmental tasks. Whereas an individual who practices adaptive ER strategies accesses a broad range of emotions and alters her emotional orientation in the diverse circumstances of everyday life, such versatility is challenging for an individual whose emotions are dysregulated (Cole, Michel, & Teti, 1994).

Cole et al. (2009) examine ER in conjunction with the development of serious misconduct (an externalizing problem) in a literature review and case study of a child from the age of four to 15 years. They propose that the development of aggression and externalizing symptoms stems from an individual's temperament, environmental stress, and the inability of family members to provide effective ER modeling in order to teach the child how to modulate and cope with intense emotion. Furthermore, research by Olson, Sameroff, Lunkenheimer, and Kerr (2009) shows that the inability to regulate frustration and anger effectively is a key predictor of early-onset externalizing disorders, and research by Bowie (2010) indicates a link between underregulation and aggression.
In sum, maladaptive ER can result in the development of psychosocial difficulties. Research points to the overregulation or over-control of emotion as a factor predicting to the development of internalizing problems, such as depressive symptoms. Conversely, the underregulation and dysregulation of emotion is associated with the development of externalizing problems. It is important to note that these socioemotional outcomes and the factors influencing their development are described in the context of Western culture, and may not be generalizable to individuals and cultures around the world—an element which merits further attention.

**Emotion Regulation across Cultures**

Germane to the current study is the extent to which ER fits into the complex fabric of cultural norms and values that influence an individual’s emotional development. As ER is not exclusively a product of “nature,” non-biological factors are crucial to fully understanding its development. Studies indicate that across the globe, individuals share some universal aspects of emotion (Ekman & Davidson, 1994). Facial expression research has identified seven basic emotions (anger, fear, sadness, disgust, surprise, happiness, and contempt) consistently throughout cultures. However, emotion management strategies are not universal. Instead, ER is enmeshed in culture such that ER skills are learned through experiences with family members, peers, and the broader community.

According to Super and Harkness (1986), culture can be conceptualized as a developmental niche in which children obtain knowledge and skills. The developmental niche includes the physical and social setting in which the child lives, culturally regulated child-rearing customs, and caregiver beliefs concerning child development. Culture is the conglomeration of the traditions, opinions, beliefs, and behaviors that shape an individual's understanding of the
world. In the case of emotional development, cultural display rules guide emotional expression. Display rules are culturally defined and indicate when, how, and which emotion should be expressed in specific social contexts (Saarni, 1989). By elementary school, children explicitly understand these rules and comprehend when and in which contexts certain types and/or degrees of emotional expressivity are appropriate. For example, in Western culture children between the ages of 5-10 years are actively taught to conceal their emotions for prosocial (e.g., to prevent upsetting a peer) or self-protective (e.g., to avoid punishment) reasons (Saarni, 1999). These cultural display rules differ across social contexts, between emotions, and in response to cultural values.

Currently, there is a dearth of research assessing ER outside of Western cultures. The majority of studies measure ER in Western, Caucasian, middle-class children, thus excluding populations of minority children within Western culture and all children from non-Western cultures (Cole, Tamang, & Shrestha, 2006). Without these data, it is impossible to answer questions such as: “Are there universal modes of ER,” “How do the values of a community influence emotional expression,” “Is the development of ER consistent across gender and age throughout societies,” etc. Several researchers have begun to answer these questions and what follows is a literature review of those studies which have begun to examine ER processes in children across cultures.

**Cross-cultural emotion regulation research.** Mesquita and Markus (2004) discuss ER processes with respect to cultural models of agency. They define models of agency as, “implicit frameworks of ideas and practices about how to be that construct the actions of the self, others, and the relationships among those actions” (p. 345). In other words, models of agency provide the guidelines for coordinating actions individually and in groups. They may be fostered in a
culture by the types of relationships that are condoned, the etiquette prescribed, the use of language in the media, and specific institutional policies and practices.

Given that different cultures promote different norms and social behaviors, it logically arises that they foster different models of agency as well. Mequita and Markus (2004) identify two distinct frameworks and respective examples of cultures in which they are prevalent. The first model of agency is termed “disjoint,” and is reflected in European American cultures. The disjoint model dictates that one be focused on the self and that the self should be free from others, happy and positive, and seeking to control and influence the environment. The second model, termed “conjoint” is reflective of East Asian cultures. Here, individuals view themselves as interdependent selves belonging to social groups who perceive the environment through the perspective of others.

Models of agency exert influence on emotion processes by prescribing which emotions are appropriate to feel and express and which need to be controlled, inhibited, or managed. The influence of these models was demonstrated by a study that investigated variance in emotion coping mechanisms between American and Japanese university students and adults (Mesquita, Karasawa, Haire, & Izumi, 2002). The participants were asked to report situations when they had encountered an offense and how they had emotionally coped during that time. Mesquita et al. (2002) found that the American responses were consistent with disjoint models of agency whereas Japanese responses were consistent with conjoint models of agency. Specifically, Americans tended to prioritize the individual's goals over those of the relationship, salvage self-esteem, and distance themselves from the offender through blame or aggression. Conversely, Japanese individuals coped by seeking to adjust the situation in order to reestablish or maintain
relationships or by taking responsibility for the offense. After an emotional event, individuals have very different goals based on the model of agency to which they ascribe.

Researchers have conducted cross-cultural studies that examine children from societies guided by opposite models of agency. Research by Cole, Bruschi, and Tamang (2002) examined the beliefs of children from rural Nepal and the United States concerning revealing emotion in difficult interpersonal situations. The second-, fourth-, and fifth-grade children in the study identified with one of three cultures (Brahman, Tamang, or American). The former two Nepalese cultures are influenced by Asian values—often described as collectivistic, interdependent, or self-accommodating, that place great value in maintaining harmonious relationships and respecting authority while discouraging the expression of anger and valuing the expression of shame. Nepal can be considered a country that endorses a conjoint model of agency. Conversely, American culture (and that of other Western societies) can be described as valuing individuality, autonomy, and self-assertion, thus tolerating anger in the interest of self-expression while devaluing shame (perceived to undermine the healthy development of a child’s self-esteem). American culture endorses a disjoint model of agency. Despite the inclination to separate these three cultures into only two broad categories (collectivist vs. individualistic or conjoint vs. disjoint), further distinctions were made between the two Nepalese cultures. The Brahman were described as valuing social prestige, authority, and feelings of pride. The Tamang were distinguished by their egalitarianism, tolerance, selflessness, and submissive social behavior.

The researchers further hypothesized that these distinct cultural patterns would lead to the development of distinct ER patterns in children. This hypothesis was supported. Results indicated that the Tamang children were more likely to describe their reaction to a difficult situation with feelings of shame or “thiken,” (translated as “okay”), whereas Brahman and
American children were more likely to endorse anger. Tamang and American children were more likely to communicate negative emotion directly than were Brahman children. Further, age differences arose across cultures in the communication of anger. Brahman children seemed to understand from an early age (second grade) that one could feel a different emotion than the one they chose to express. In the Tamang culture, it was not until children grew older that this understanding fully developed, as demonstrated by results indicating that the older children were twice as likely as the younger children to state that anger should not be revealed. American children demonstrated opposite effects such that older children were more likely than younger children to report communicating anger. These results clearly indicate the important role of culture in the developmental environment that influences ideas about the communication of emotion and regulation beliefs. Cultural display norms are learned and reinforced as children age.

Cultural differences do not exist solely between countries, but between cultures within the same country as well. For example, in the United States, cultural differences can be present between different geographic regions (e.g., mid west and north east) that cut across racial and ethnic lines. Some research has indicated that cultural differences may exist between African American and European American children residing within the same region of the country. Belgrave and Allison (2010) discuss the need to apply an Africentric perspective when studying African Americans because African beliefs and behaviors are central to the study of people of African descent. They highlight the importance of collectivism as a shared characteristic of African and African American populations; a characteristic less integral to European American culture. Belgrave and Allison (2010) expound upon this point by quoting an African proverb, “I am because we are and we are because I am,” which characterizes the self as derived from
relationships with others (p. 9). In addition to collectivism, they cite spirituality, time orientation, orality (receiving information from the world orally), verve and rhythm, and harmony with nature as unique influences to African American culture. As such, the social and cultural environments in which African American children develop may differ from those of European American children.

Although the literature on ER in African American children is limited, two studies are noteworthy. First, Cunningham, Kliwer, and Garner (2009) conducted a study examining the association of boys’ and girls’ emotion understanding and regulation to psychosocial adjustment. Participants were 69 African American elementary school children from an urban environment. Researchers assessed “adjustment” via the variables of academic grades, internalizing behaviors, externalizing behaviors, and social skills. They found that interesting gender differences existed. For girls, high scores of emotional understanding predicted positive social skills, whereas for boys, similar scores predicted to lower levels of internalizing behaviors. When boys reported higher levels of adaptive ER strategies these behaviors were more likely to predict to positive social adjustment than when girls reported similar levels. Adaptive ER for both genders was associated with better grades, fewer internalizing and externalizing behaviors, and stronger social skills. Although more research needs to be conducted to explain these findings, this study suggests that the genderized socialization of emotion occurs within African American culture.

Second, using a longitudinal design, Supplee, Skuban, Shaw, & Prout (2009) compared ER strategies and later externalizing behaviors of European American and African American children. Emotion regulation was assessed in male toddlers and externalizing behaviors were evaluated through parental and teacher reports 2 to 6 years later. The results indicated that two ER skills were significantly related to later externalizing behaviors and the pattern of relations
differed by racial designation. The use of physical comfort seeking (e.g. asking to be held, touching the caregiver, reclining in caregiver's lap) was positively related to externalizing problems for African American children but the opposite pattern was found for European American children. European American children who exhibited high levels of self-soothing behavior (e.g., thumb sucking, sucking on a bottle or sippy cup, playing with hair, reaching for a comfort/security object) exhibited lower levels of externalizing problems 2 to 6 years later. However, for African American children, high levels of self-soothing behavior predicted to higher levels of externalizing behavior. The authors suggest a possible explanation for these cross-cultural differences. They suggest that African American parents often expect their children to behave more independently at younger ages than European American parents. Therefore, the use of more dependent and less mature regulation strategies such as physical comfort seeking and self-soothing may be more acceptable in European American cultures. However, in African American cultures, such strategies may be viewed negatively and thus associated with the development of externalizing problems. This study highlights the importance of parental understanding and perception of emotional expression in emotion socialization, and how these perceptions differ between cultures even within the same country.

Another study investigating within country cultural differences is that by Raval, Martini, and Raval (2007) who examined the regulation of anger, sadness, and pain in Gujarati children (aged five to six years and eight to nine years) from two urban communities in India (old city and suburban). Specifically, they were interested in studying ER differences in a non-Western culture and cultural differences between the two communities. The study was concerned with beliefs regarding the social acceptability of emotional expression, preferred methods of expression and control, and regulatory behaviors.
Findings indicated that in general, Gujarati children reported controlling their expressions of sadness and anger more than their expression of pain because they perceived others to be less accepting of the former emotions. Specifically, they considered their mothers to be less accepting of expressions of anger and their fathers to be less accepting of expressions of sadness. Gender differences were also present. Girls reported expressing anger less than did boys, and also expressing anger less than sadness. Additionally, age differences were present such that the eight- to nine-year-olds reported controlling emotional expression more than the five- to six-year-olds. Interestingly, there was a strong relationship between children's beliefs regarding the acceptability of emotional expression and the regulation of emotion to fit these standards. The authors suggest that cognitions that focus on the evaluations of others are prominent in guiding ER behavior in collectivist cultures like India, and these cognitions develop with age and in relation to gender norms.

Within culture differences were also present when comparing the ER of children from the two urban Indian communities. Children in the old city community viewed others to be less accepting of their emotional expressions (regardless of emotion type) and therefore reported regulating these emotions to a greater degree than children from the suburban community. Specifically, girls in the old city believed their expressions of anger would be considered less acceptable than did boys in their own community or children in the suburban community. Likewise, boys in the old city believed their expressions of sadness would be considered less acceptable than did girls in the old city or children in the suburban community. These beliefs manifested themselves in these children's ER behaviors, which were more controlled for the expressions they perceived to be less acceptable. Because children in the suburban community
were not exposed to as many traditional Hindu values as children in the old city, they may not have been socialized to abide by strict gender roles.

In sum, the little cross-cultural research on ER that has been done has primarily focused on Eastern cultures, which are commonly defined as collectivistic and fostering conjoint models of agency (Mesquita & Markus, 2004). In cultures where traditions of interpersonal relationships are most prominent, the data show that children may be more conscious of the acceptability of their expressions of emotions, and begin regulating those emotions at earlier ages than children from cultures emphasizing individualism. This consciousness of the social acceptability of expressing emotion was particularly true for anger and sadness. Children from different cultures may be socialized to express emotion differently based on the gender roles and norms of their society, and cultural differences can exist even between cultures within the same country (e.g., African American and European American cultures).

Cross-cultural research on internalizing and externalizing problem behaviors. We next examine the cross-cultural research that has investigated ER in relation to internalizing and externalizing psychological problems. Very few studies have examined children's mental health and ER from a cross-cultural perspective, thus, first, adult studies will be discussed. A study by Haga, Kraft, and Corby (2009) examined the extent to which ER strategies related to well-being across cultures. They defined well-being as high levels of life satisfaction and positive affect and low levels of depressed mood and negative affect. Participants included 489 university students from Norway, Australia, and the United States ranging in age from 17 to 65. The study examined the use of two ER strategies: cognitive reappraisal and expressive suppression. Cognitive reappraisal refers to modifying an emotional experience and response by reinterpreting the circumstance that led to the emotional reaction (e.g., after receiving a hurtful criticism from a
peer, trying to understand how the peer did not mean to be hurtful). Expressive suppression is not antecedent-focused, but rather response-focused and involves modifying the behavioral expression of an emotion (e.g., hiding one’s display of sadness after a hurtful criticism).

Results of the study indicated that, in general, the use of cognitive reappraisal was positively related to well-being whereas expressive suppression was negatively related to well-being. Those participants who reported utilizing cognitive reappraisal strategies reported higher levels of positive affect and life satisfaction and lower levels of negative affect and depressed mood. Age and gender results indicated that men used the expressive suppression strategy more often than women as did younger individuals (25 years old or younger) of both genders. The authors note that the gender differences may have occurred due to Western cultural gender expectations of masculinity that encourage fewer displays of emotion.

Differences between the three cultures arose in the suppression of negative emotions. Americans reported the greatest use of suppression, which was predicted due to the highly reinforced American cultural value of displaying positive affect. Norway and Australia, although Western cultures, do not value positive affect to the same degree and this difference was manifested in the lower rates at which these students reported using suppression strategies. It is interesting to note that although rates of strategy-use differed, the effect of these strategies on well-being was consistent across cultures. A limitation of this study was the absence of participants from a non-Western culture for comparison.

Iwata and Buka (2002) investigated the endorsement of depressive symptoms across four cultural groups. Anglo-American, Argentineans, Japanese, and Native American university students were assessed for the frequency of four symptoms: depressed affect, somatic activities, interpersonal relations, and low positive affect. Results indicated that Argentineans exhibited less
depressive symptomatology than the Anglo-Americans, Japanese, and Native Americans. The Japanese reported a lower positive affect score than the other cultural groups. The authors hypothesized that this was due to the differing models of agency endorsed in each culture. Positive affect may have been inhibited in the Japanese students due to an emphasis on collectivism and a socialization model that downplays positive emotion. Conversely, in America, there is a cultural emphasis on experiencing positive affect and thus American groups may have been more likely to encourage this experience.

Although child cross-cultural research on ER and mental health is rare, Batum and Yagmurlu (2007) conducted a study examining the link between ER and externalizing problems in Turkish elementary school children. Children were assessed for flexibility of emotional expression/reaction, mood lability, anger dysregulation, the ability to modulate emotional arousal, and situationally appropriate displays of both positive and negative emotion. The authors found that underdeveloped ER strategies significantly predicted externalizing behaviors. Gender trends were revealed which indicated that boys exhibited lower levels of ER and in turn, higher levels of externalizing problems. More child studies such as this one are needed to investigate trends in ER development and mental health, in order to better understand how this relationship is influenced by culture.

**Need for Cross-Cultural Research**

There is a pressing need to investigate children's ER cross-culturally for at least three reasons. First, as we know, human development does not occur in a social vacuum; instead it is the result of interactions between the individual and his or her environment. Specifically, children's emotional development is facilitated by family, community, and broader cultural influences (Bronfenbrenner, 1994). Second, research indicates that there are both culturally
universal and culturally unique ways in which adults appraise, express, and communicate emotions (Mesquita & Frijda, 1992). In order to develop a broader understanding of culture's influence on emotion, it is essential to first understand how children's ER strategies in these cultures develop. Finally, understanding ER in a cross-cultural context is necessary in order to understand patterns of normal and abnormal emotional development and the impact of this development on psychopathology across cultural groups. Current Western models of emotion development in relation to mental health may not be accurate when applied to other societies, and thus cannot be used interchangeably in all populations studied. It is necessary to formulate new models for societies that are different from our own. Currently, the cross-cultural research that focuses on children's ER is limited to Asian countries, with only a few studies exploring other cultures (e.g. Turkey, African Americans in the United States). As such, there is a dearth of information on ER strategies in children from Africa—a continent that houses a diverse host of cultures. Research investigating ER in Ghana can provide a small window through which to examine African cultural influences on emotion development.

**Emotion in Ghana**

Ghana is a coastal nation located in Western Africa that shares a border with the Ivory Coast to the west and Togo to the east. Due to colonialization by the United Kingdom, Ghana did not become politically independent until 1957. Today, the country houses a population of approximately 20 million people who generally fall into seven ethnic categories: Fante, Asante, Nzima, Ahanta, Ga, Moshi-Dagomba, and Gonja (O’Malley & Heath, 2010). Although English is the official national language, over 70 indigenous languages are spoken throughout the country (Dzokoto & Adams, 2007). Due to British imperialism, postcolonial Ghana is influenced by both traditional and Western ideals and customs. Although Western ideologies persist in law,
education, and government, traditional norms are also an important part of these Ghanaian institutions. For instance, traditional rulers and chiefs still wield authority in local government. According to Lo and Dzokoto (2005) modern day Ghana has seen a significant shift in the status of women as more attention has been given to female education, women’s participation in diverse professional fields, and female contributions to the economic development of the country. At the same time, the role of women as mothers is still highly valued and thus a balance between domesticity and participation in the professional world is a societal concern. According to Hofstede's cultural dimensions, Ghana (a West African country) is characterized as collectivistic (Hofstede & Hofstede, 2005). As such, Ghana fosters a conjoint model of agency where ties between individuals are strong, and the presence of cohesive in-groups and extended families are prevalent.

Few studies have examined the emotional experiences of Ghanaians directly or of Africans in general. Dzokoto and Adams (2007) examined emotional expression in Ghana through the textual analysis of the Ghanaian novel Changes, by Ama Ata Aidoo (1991). Described as literature which celebrates the spirit and challenges faced by modern Ghanaian women and societal changes in modernity, Changes is a descriptive source of individual and cultural emotional expression in contemporary Ghana. As the authors discussed, African populations have unique historical factors that may have permanently influenced their experience, development, and expression of emotion (i.e., slavery, colonialization, racism). Therefore, the focus of the textual analysis was to broaden the examination of emotional development to children living in West Africa and then compare these findings to those from Western cultures to determine if differences in emotional discourse and experience exist.
Dzokoto and Adams (2007) specifically examined the emotional language and descriptions of emotion used throughout the novel. They observed that references to the body and body movement were common when describing emotion. For example, “motionlessness” embodied a form of emotional expression in Changes. This contrasts with Western society’s emotional discourse, which generally emphasizes the psychological aspects of emotions. In Ghana the relationship between the mind and the body is manifested in the description of “motionlessness” as an emotional expression, while in Western language traditions (which focus on emotional expression as psychological activity) this same state might be described as “flatness of affect” or even “absence of expression.” There seems to be a stronger link in Ghana between emotion and body sensation/experience than in Western cultures.

Guerts (2002) expands upon this connection between emotions and body sensation in her exploration and description of the Anlo-Ewe (an indigenous Ghanaian language) expression seselelame. Roughly translated as “feeling in the body,” seselelame is used in connection with the experience of emotional states within the body (p. 183). While Western cultures associate perception with cognitive functioning and sensation with physiological functioning, seselelame bridges that gap and makes no distinction between sensation, emotion, intuition, and cognition.

In considering specific emotion types and expressions, a study examined gender differences in emotional experiences from 37 countries around the world (Fischer, Rodriguez Mosquera, van Vianen, & Manstead, 2004). Of these countries, four were the African nations of Botswana, Malawi, Zambia and Zimbabwe. Specifically, the researchers were interested in investigating gender differences in the experience and expression of powerful (e.g., anger, disgust) and powerless (e.g., sadness, fear, shame, guilt) emotions. Furthermore, the extent to which such gender differences were related to each country's Gender Empowerment Measure
(GEM) was examined. GEM refers to women's role and status in a country and the extent of their participation in economic and political life (United Nations Development Program Report, 2002). Generally, African, Asian, and South American countries have relatively low GEM scores due to traditional divisions of labor between genders. In most Western European and North American countries, GEM scores tend to be higher and women participate more actively in economic, social, and political life. The GEM score for the United States (.675) was significantly higher than the scores for Botswana (.475), Malawi (.256), Zambia (.304), and Zimbabwe (.428; Fischer, 2000, p. 80).

Across all countries, several significant gender differences emerged. First, women rated their intensity of sadness, fear, shame, and guilt (the powerless emotions) as significantly higher than men. Furthermore, an interaction between gender and GEM scores indicated that men in countries with low GEM scores (like the African nations) rated their powerless emotions as more intense than men in countries with higher GEM scores (like the United States). The authors propose that powerlessness and vulnerability correspond more with the male gender role in non-Western countries than in Western countries. As a result, male restrictive emotionality may be a more typical pattern in Western societies. Additionally, women in countries with high GEM scores reported more expressions of anger than women in countries with low GEM scores.

Lastly, a cross-cultural study was conducted on crying and mood change in young adults, aged 16 to 28 years (Becht & Vingerhoets, 2002). Data were collected from 30 countries, including Ghana. Specifically, the study examined the influence of crying-related and country characteristic variables on mood change after crying. The variables investigated were frequency of crying, feelings of shame related to crying, country levels of masculinity-femininity (the distribution of roles and values between genders in a society), collectivism versus individualism,
gender empowerment levels, national income, and mean temperature levels. Differences in
gender were reported.

Results revealed that overall, women reported crying more frequently and they reported
fewer experiences of shame over crying than men. In general, men and women from all countries
reported a positive mood change after crying. Looking specifically at Ghana and the United
States, these gender differences were maintained. However, in Ghana, the Estimated Crying
Frequency (ECF) score was more comparable between men and women (ECF for men: $M = 0.7$,
$SD = 1.4$; ECF for women $M = 1.7$, $SD = 2.1$) than in the United States, where men reported
crying significantly less than women (ECF for men: $M = 1.9$, $SD = 2.2$; ECF for women $M = 3.5$,
$SD = 2.8$; Becht & Vingerhoets, 2002, p. 94). These averages also indicated that individuals of
either gender in Ghana reported crying less than did individuals of either gender in the United
States.

Despite these studies, it is apparent that there is a dearth of research investigating specific
emotional expression and management styles in Ghana. Although adult studies shed some light
on emotional expression, emotional development and management in Ghanaian youth has yet to
be explored. Additionally, mental health in Ghana, and in Africa overall, is a research area that
has been largely neglected.

The Present Study

The aim of the present study was to investigate children's regulation of sadness and anger
in relation to internalizing and externalizing problems as influenced by culture, child gender, and
child age. Specifically, children's ER from a Western culture (America) and a non-Western
culture (Ghana) was compared. To date, no one has examined how children's management of
anger and sadness is associated with mental health in America versus Ghana. Nor has the
influence of gender and age on the regulation and expression of emotion been considered in these contexts.

As previously discussed, ER does not just involve the suppression of emotion, but rather the moderation and modulation of expression. Therefore, the present study examined three different ER behaviors: coping (responding to an emotion in an effortful, conscious way), inhibition (the dampening or suppression of emotion), and dysregulation (showing emotion in an overt, exaggerated manner; Zeman, Shipman, & Penza-Clyve, 2001). These regulatory behaviors were examined across two emotion types: sadness and anger. Sadness and anger, both defined as “negative” emotions, were selected because individuals are likely to manage the expression of these emotions within social context and they are common childhood experiences. According to Zeman and Garber (1996), the socialization of emotional expression is most targeted at negative emotions. In order to best understand the effect of culture on ER it was necessary to examine highly socialized and regulated emotions like sadness and anger that are also commonly experienced across cultures.

As mental health and ER have been shown to be related, the present study examined this association. Psychological functioning in children has often been conceptualized along two broad-band categories: internalizing (e.g., anxiety, depression) and externalizing (e.g., acting out, aggression, oppositionality) problems. Because the overregulation of emotion has been associated with depressive symptoms (Silk, Steinberg, & Morris, 2003) and the underregulation of emotion with aggression (Bowie, 2010), these variables were the focus of the present study.

Finally, as referenced earlier, gender and age both play important roles in the emotional experience. As documented within American culture, children are socialized to express emotion differently based on gender and they develop a greater understanding of emotion and ER as they
age. Across cultures, gender roles and norms vary, as do age-based behavioral expectations. The present study investigated how these variables influenced emotional expression and regulation in children from America and Ghana.

To measure these variables, information was obtained from the children. Previous research has demonstrated that children are the most accurate providers of personal, internal experiences and these descriptions are more valid than those of external observers (Larsen & Prizmic-Larsen, 2006; Wallbott & Scherer, 1989). Although external observers (e.g., parents, teachers or peers) may be able to comment on behaviors, it is unlikely that they can accurately describe the feelings, cognitions, and emotional understanding of the child. Further, given the societal structure of Ghanaian culture, recruiting parents to participate in a research study was highly improbable as they were working multiple jobs, often in distant communities, and raising numerous children and supporting extended family members.

**Hypotheses**

Because the development of ER strategies in children is largely influenced by social environment and culture, it was expected that the emotional management skills of Ghanaian and American children would differ. This hypothesis was based on research highlighting the differences between collectivistic cultures, like Ghana, and individualistic cultures, like America. However, due to the exploratory nature of this research, it was difficult to make specific predictions about how the variables of nationality, gender, and age would influence ER. Moreover, the dearth of research on mental health in Ghana allowed little room for reasoned hypotheses as to the relationships between ER, depressive symptomatology and aggression. As such, the following relationships are offered as speculations that are exploratory in nature.
Emotion regulation

1. First, based on the adult crying study (Becht & Vingerhoets, 2002), it was expected that Ghanaian children would inhibit sadness expression more than American children and dysregulate their sad emotions less. It was also anticipated that there would be fewer gender differences between boys and girls in Ghana in the sadness regulation strategies reported. However, as several studies indicated that positive affect was desirable in the United States, it was plausible that American children would inhibit their sad emotions more than Ghanaian children.

2. Due to a lack of research on anger expression and management in Ghana or Africa, a hypothesis was generated based on personal observations for this variable. It was expected that Ghanaians would report more frequent anger expression and anger dysregulation as frequent and overt displays of anger were observed in numerous settings while in Ghana.

Mental health. In terms of mental health, hypotheses were made based on research indicating that internalizing behaviors are associated with the over-control of emotion and externalizing behaviors are associated with the under-control of emotion. The following hypotheses were based on Western norms and not necessarily generalizable to non-Western cultures.

1. It was anticipated that higher levels of sadness and anger inhibition would predict to depressive symptomatology.

2. It was anticipated that higher levels of anger dysregulation would predict to aggression.

3. More frequent experiences of sadness and anger were expected to predict to more symptoms of depression and aggression, respectively.
Gender and developmental differences

1. Gender differences in ER were expected due to differences in GEM (Gender Empowerment Measure) scores between the United States and African countries (Fischer et al., 2004). Specific predictions by gender were formulated, with the expectation that males would report greater inhibition of sadness, while females would report greater inhibition of anger.

2. Developmental findings were expected to cut across culture such that older children were hypothesized to report using more controlled, well-regulated ER strategies than younger children due to a more advanced understanding and experience with managing displays of negative emotions.

Method

Participants

Ghanaian participants. The Ghanaian sample included 68 boys and 74 girls, ages 8 to 15 ($M = 11.07, SD = 1.88$) who were primary and junior high school students attending a private, co-educational school in Ghana. Mean ages were not significantly different between genders, $t(140) = .29, p = .78$. (See Table 1 for descriptive statistics by age group). These 142 participants were all residents of communities in the Greater Accra Region.

The school was located in the community of Adenta, a suburb of Accra, the nation’s capitol. The estimated population of Accra stands at approximately three million people (Johnson, 2010). One-third of Ghana's manufacturing takes place in the Greater Accra Region, although subsistence farming contributes to the most substantial part (36% of the GDP) of the local economy. Accra is the political, economical, and technological center of Ghana. It is
primarily home to members of the Ga tribe who speak Ga and English, although the Twi language is also common (Johnson, 2010).

Adenta is a community located to the north of Accra. Citizens range from the comfortably wealthy (working professionals living in well-maintained houses) to the extremely impoverished (selling water on the streets and living in self-constructed shacks). Students attending the private school were predominantly from middle-class, working families.

The school compound included four buildings which housed the preschool/day care, primary school (grades 1-6), junior high school (forms 1-3), and cafeteria. With over 800 students in attendance, there were two classrooms for each grade, two computer labs, and one small library. Classroom sizes across all grades were approximately 25 to 30 students. Children completed school work in booklets of lined writing paper, and did not use textbooks. All assignments were provided by the teacher who taught at the chalkboard in front of the room. Children were disciplined with a cane for acting out. Lights were rarely used in the classrooms to preserve electricity. Children received breakfast and dinner at the school. Yearly tuition was 255 Ghana cedis (182 US dollars) for 3rd graders, 275 Ghana cedis (197 US dollars) for 4th, 5th and 6th graders, and 315 Ghana cedis (225 US dollars) for Form 1 and 2 (7th and 8th grade) students. In addition to school fees, students were responsible for purchasing uniforms and school supplies.

Students were randomly sampled from classrooms in grades 3 through 8. All children were informed that their participation was voluntary and that there would be no negative consequences for refusing to participate or failing to complete the questionnaires. All children gave verbal consent before participating in the study. No participants withdrew from the study. Each child received a small gift (i.e., pencil, eraser) for their participation.
American participants. The American participants were drawn from one public elementary school and one public middle school in Williamsburg, Virginia. In addition to classrooms, these schools each housed computer labs, a library, a cafeteria, and a gymnasium. There were approximately 20 students per class and children utilized textbooks, workbooks, and technology in the classroom. The sample of 147 students included 75 boys and 72 girls, ages 8 to 14 ($M = 10.24, SD = 1.77$). Mean ages were not significantly different between genders, $t(145) = 1.51, p = .13$. (See Table 1 for descriptive statistics by age group). The ethnic backgrounds of participants were Caucasian (66.0%), African American (19.7%), Hispanic (5.4%), Asian (2.0%), and mixed ethnicity (6.9%). In the elementary and middle schools, 35.46% and 34.06% of students, respectively, received free or reduced lunch.

At each school, parental consent forms detailing the study were sent home to all 3-5th grade children and to 15 classrooms in the middle school. Children were required to have a signed parental/guardian consent form in order to participate. Of those children who returned consent forms, 69.3% from the elementary school and 77.9% from the middle school were given parental consent to participate in the study. Verbal assent was also received from all children before participation in the study. Children were informed that their participation was voluntary and that no negative consequences would result from refusing to participate or failing to complete the questionnaires. No participants withdrew from the study. Upon completion of the study, children received a small gift (i.e., pencil, bookmark) for their participation.

Measures

Emotion regulation. The Children’s Emotion Management Scales (CEMS, Zeman et al., 2001) for sadness (CSMS) and anger (CAMS) were used to measure emotional regulation (see Appendices A and B). The 12-item CSMS and 11-item CAMS require children to use a 3-point
frequency scale (1 = hardly ever, 2 = sometimes, 3 = often) to rate the frequency of use of specific ER behaviors through three subscales measuring: ER coping (e.g., “I try to calmly deal with what is making me sad,” “When I’m feeling mad, I control my temper.”); inhibition of expression (e.g., “I hold my sad feelings in,” “I hide my anger.”); or overt emotional displays termed “dysregulation” (e.g., “I cry and carry on when I’m sad,” “I attack whatever it is that makes me mad.”). Results of previous research have yielded acceptable internal consistencies ranging from .62 to .77 with Caucasian, middle class children of elementary school age (Zeman et al., 2001).

For the present study, internal consistencies ranged from .43 to .68. Specifically, the coefficient alphas for sadness inhibition (alpha = .57), anger coping (alpha = .64), anger inhibition (alpha = .68), and anger dysregulation (alpha = .52) were stronger than those for sadness coping (alpha = .48) and sadness dysregulation (alpha = .43). The dysregulation scales had three items each whereas the inhibition and coping subscales ranged from four to five items each.

An Emotion Frequency Scale was used to measure the frequency of sadness and anger over the past year. A 5-point Likert scale (1 = Not at all like me, 2 = A little like me, 3 = Somewhat like me, 4 = Like me, 5 = A lot like me) assessed children’s responses to two statements describing the frequency of these emotions, “I feel sad or down,” and “I feel angry or frustrated.”

Mental health. To assess internalizing behaviors, the abbreviated version of the Child Depression Inventory (CDI-S, Kovacs, 1992) was used to measure the presence of depressed mood (see Appendix C). The abbreviated CDI-S consists of 10 items, each composed of three choices describing the child’s feelings. These statements range in severity and frequency of
maladaptive cognitions, emotions, or behaviors (e.g., “I am sad once in a while,” “I am sad many times,” “I am sad all the time.”). It demonstrates good internal consistency, with an alpha coefficient of .80. Cronbach's alpha for the CDI-S in the current study was .72. Scores range from 0 to 20, with higher scores indicating increased severity of depressive symptoms. Raw scores were summed to provide a total score and used for analysis. CDI-S data were not collected from 2 Ghanaian participants due to student unavailability. Raw scores were then transformed into T-scores based on the CDI manual to provide an indication of clinical severity. In the Ghanaian sample, five participants (1 boy, 4 girls) scored in the clinically significant range. In the American sample, 11 participants (4 boys, 7 girls) scored in the clinically significant range.

Children’s aggressive behaviors were assessed with the 17-item Aggression subscale of the Youth Self-Report form of the Child Behavior Checklist (CBCL, Achenbach & Rescorla, 2001; see Appendix D). Items assessed the extent to which children exhibited specific aggressive behaviors (e.g. “I argue a lot”). Children responded to items on a 3-point scale (1=not true, 2=sometimes true, 3=often true). Scores range from 0 to 34 with higher scores indicating increase severity of aggressive behaviors The YSR has demonstrated good internal consistency, with an alpha coefficient of .86. Cronbach’s alpha was calculated for the current study (alpha = .82), and also demonstrated strong internal consistency. For the current study, raw scores were summed to provide a total score and then used for analysis. YSR Aggression data were not collected from 36 Ghanaian participants due to student unavailability. Raw scores were also converted to T-scores in order to determine the number of children who scored in the borderline significant and clinically significant ranges. In the Ghanaian sample, 18 participants (10 boys, 8 girls) scored in the borderline range and 11 participants (6 boys, 5 girls) scored in the clinical range. In the
American sample, 14 participants (9 boys, 5 girls) scored in the borderline range and 14 participants (10 boys, 4 girls) scored in the clinical range.

Procedure

**Ghana.** Administrative permission was given from the school to conduct the study. An interview was conducted with each participant. A translator was not needed because students had a strong command of English. The same female Caucasian researcher conducted each interview with as much consistency as possible across interviews. Participants were selected at random from classrooms to interview with the researcher in a private location. The interviewer then explained the study and obtained verbal assent from the participant before proceeding. Participants were first asked a series of demographic questions by the researcher and were then asked to respond to the items on the CEMS, Emotion Frequency Scales, CDI-S, and the YSR Aggression subscale. All measures were read out loud to the children. Questionnaires were administered in random order. Children were provided with a laminated copy of the scales in case they wanted to read along with the interviewer, and they were asked to verbally indicate the answer that best described them. If a child had questions about any items or did not demonstrate understanding of the content, the researcher would repeat the question and explain it in a different manner until the researcher was satisfied that the child understood the question thoroughly. The protocol took about 20 minutes per child. Upon completion, participants were able to select a pencil and eraser from the experimenter as a gift for participating.

**America.** Parental informed consent was received from all participants. Group interviews were conducted in the American schools. The decision to conduct interviews with groups of children was made to ensure efficient data collection during prime educational school time. Groups consisted of 3-8 students in the elementary school and 10-15 students in the middle
school. Before beginning the study, children were seated at tables or desks that were evenly spaced in order to allow for privacy of response. The researcher then described the study and received verbal assent for participation from each of the students before proceeding. The interviewer conducted the study as described in the Ghana procedure and read each questionnaire and the corresponding answer choices out loud. Children were provided with packets that included the measures and spaces to record responses. In addition to the main interviewer, several other researchers were present during the study to ensure that all participants understood the questions. Children experiencing difficulty were pulled aside and a researcher proceeded to administer the questionnaires one-on-one. Upon completion of the study all children received a pencil or bookmark as a gift for participating in the study.

**Results**

**Preliminary Analyses**

Children were placed into a younger and an older age group based on their age in years. The younger age group was comprised of 82 Ghanaian children and 109 American children who were between the ages of 8 and 11. The older age group was comprised of 60 Ghanaian children and 38 American children who were between the ages of 12 and 15. (See Table 1 for mean ages and gender descriptives).

Given literature that indicates the presence of cultural differences as a function of race, analyses were conducted to determine whether African American and European American children differed on the primary variables. Using Independent Samples t-tests, significant differences between groups were not found (see Table 2). As such, racial differences in the American sample were not examined in subsequent analyses.
Emotion Regulation Analyses

Multivariate analyses of variance (MANOVA) were calculated for sadness regulation and anger regulation with the three subscales (i.e., coping, inhibition, dysregulation) comprising the dependent variables and nationality (Ghanaian, American), age group (younger, older), and gender being the independent variables. Univariate analyses of variance (ANOVA) were calculated for the emotion frequency scales with nationality (Ghanaian, American), age group (younger, older), and gender being the independent variables.

Sadness regulation. MANOVA results revealed a significant main effect for nationality, Wilk’s $\lambda = .92$, $F(3, 278) = 8.42, p < .001, \eta^2 = .08$. Tests of between-subjects effects indicated a nationality difference for sadness coping $F(1, 288) = 6.60, p < .05, \eta^2 = .02$. Inspection of scores indicated that American children ($M = 11.21, SD = 2.34$) reported using sadness coping strategies more frequently than African children ($M = 10.33, SD = 1.69$), $t(286) = 3.64, p < .001$. Tests of between-subjects effects also indicated a nationality difference for sadness dysregulation $F(1, 288) = 18.22, p < .001, \eta^2 = .06$. Inspection of scores indicated that African children ($M = 5.87, SD = 1.46$) reported dysregulating their sad feelings more than American children ($M = 5.03, SD = 1.55$), $t(287) = 4.72, p < .001$. No significant effects emerged for sadness inhibition.

MANOVA results also revealed a significant main effect for gender, Wilk’s $\lambda = .96$, $F(3, 278) = 4.35, p < .01, \eta^2 = .05$. Tests of between-subjects effects indicated a gender difference for sadness coping $F(1, 288) = 5.99, p < .05, \eta^2 = .02$. Inspection of scores indicated that boys ($M = 11.07, SD = 2.13$) reported using more frequent coping strategies for sadness than girls ($M = 10.50, SD = 2.01$), $t(286) = 2.33, p < .05$. Tests of between-subjects effects also indicated a gender difference for sadness dysregulation $F(1, 288) = 7.47, p < .01, \eta^2 = .03$. Inspection of
scores indicated that girls ($M = 5.66, SD = 1.57$) reported dysregulating their sad feelings more frequently than boys ($M = 5.21, SD = 1.53$), $t(287) = 2.41, p < .05$.

**Frequency of sadness.** A significant three way interaction between nationality, gender, and age group was found, $F(1, 289) = 4.79, p < .05$. $\eta^2 = .02$. This interaction was best explicated by examining the gender x age group interaction within each nationality. For American children, a significant gender main effect was found $F(1, 147) = 4.25, p < .05$. Specifically, older girls reported feeling sad ($M = 2.77, SD = .93$) more frequently than did older boys ($M = 1.96, SD = .89$), $t(145) = 1.41, p = .160$, although this effect was not significant when examined at this level of analysis.

**Anger regulation.** MANOVA results revealed a significant main effect for nationality, Wilk’s $\lambda = .93, F(3, 279) = 7.14, p < .001, \eta^2 = .07$. Tests of between-subjects effects indicated a nationality difference for anger dysregulation $F(1, 289) = 16.48, p < .001, \eta^2 = .06$. Inspection of scores indicated that African children ($M = 5.85, SD = 1.58$) reported higher levels of anger dysregulation than American children ($M = 4.99, SD = 1.68$), $t(287) = 4.48, p < .001$. No significant effects emerged for anger coping or anger inhibition.

**Frequency of anger.** A significant main effect emerged for nationality, $F(1, 289) = 15.32, p < .001$ such that American children ($M = 2.90, SD = 1.30$) reported feeling angry or frustrated more often than African children ($M = 2.24, SD = 1.20$), $t(287) = 4.50, p < .001$.

**Mental Health Analyses**

Univariate analyses of variance (ANOVA) were calculated for the CDI-S and YSR Aggression subscale with nationality (Ghanaian, American), age group (younger, older), and gender being the independent variables.
Depressive symptoms. A significant gender main effect emerged for the CDI-S, $F(1, 287) = 11.40, p < .01$ such that girls ($M = 3.04, SD = 2.27$) reported more depressive symptoms than boys ($M = 2.27, SD = 2.44$), $t(285) = 2.44, p < .05$. This main effect was qualified by a significant gender x age group interaction, $F(1, 287) = 6.11, p < .05$. The interaction was broken down by examining gender differences within age group. Specifically, older girls ($M = 3.81, SD = 3.20$) reported higher levels of depressive symptomatology than older boys ($M = 1.98, SD = 1.97$), $t(95) = 3.44, p < .01$. There were no significant gender differences within the younger age group.

To better understand the nature of the responding to the CDI-S, an analysis of individual items was conducted examining nationality differences given that this was the primary focus of the current study. Independent samples t-tests revealed significant nationality differences for three items. For the first of these items, children could choose from three responses coded 0, 1, 2 including the responses “Things will work out for me okay,” “I am not sure if things will work out for me,” or “Nothing will ever work out for me.” American children ($M = .42, SD = .55$) reported the clinically significant responses more often than Ghanaian children ($M = .28, SD = .51$), $t(286) = 2.22, p < .05$. In the second of these items, children could choose from the responses “I do most things okay,” “I do many things wrong,” or “I do everything wrong.” Ghanaian children ($M = .28, SD = .45$) reported the symptomatic responses more often than American children ($M = .17, SD = .39$), $t(286) = 2.14, p < .05$. Finally, when children could choose from the responses “I have plenty of friends,” “I have some friends but wish I had more,” or “I do not have any friends,” Ghanaian children ($M = .41, SD = .55$) reported the maladaptive responses more often than American children ($M = .28, SD = .51$), $t(286) = 2.13, p < .05$. 
Aggressive behaviors. A significant main effect for nationality was revealed on the YSR Aggression subscale, $F(1, 253) = 9.00, p < .01$. Ghanaian children ($M = 10.48, SD = 4.23$) reported higher levels of aggression than did American children ($M = 7.92, SD = 6.27$), $t(251) = 3.65, p < .001$.

To better understand the nature of the responding to the YSR Aggression subscale, an analysis of individual items was conducted in which responses were coded 0 (not true), 1 (sometimes or somewhat true), and 2 (often true). Nationality differences were explored using independent samples t-tests. Significant differences emerged for six items. For the first of these items, “I am mean to others,” American children ($M = .44, SD = .59$) reported higher frequencies of this behavior than did Ghanaian children ($M = .29, SD = .53$), $t(251) = 1.99, p < .05$. In response to the item “I try to get a lot of attention,” Ghanaian children ($M = .94, SD = .73$) reported higher frequencies of this behavior than did American children ($M = .56, SD = .75$), $t(251) = 4.01, p < .001$. For the third of these items, “I destroy things belonging to others,” Ghanaian children ($M = .27, SD = .51$) reported higher frequencies of this behavior than did American children ($M = .14, SD = .40$), $t(251) = 2.41, p < .05$. In response to the item “I scream a lot,” Ghanaian children ($M = .75, SD = .69$) reported higher frequencies of this behavior than did American children ($M = .35, SD = .63$), $t(251) = 4.90, p < .001$. Ghanaian children ($M = 1.16, SD = .72$) reported higher frequencies of the behavior “I am suspicious,” than did American children ($M = .68, SD = .71$), $t(251) = 5.27, p < .001$. Finally, Ghanaian children ($M = 1.30, SD = .72$) reported higher frequencies of the behavior “I tease others a lot,” than did American children ($M = .28, SD = .53$), $t(251) = 12.99, p < .001$. 
Regression Analyses

Given the significant nationality differences found in the independent variables, hierarchical regressions were conducted separately for Ghanaian and American children. Also, given that sadness and anger serve different functions, regressions were also conducted separately by emotion type. To address whether sadness and anger regulation predicted to depressive symptomatology and aggression, eight hierarchical regressions were conducted, four for Ghanaian children and four for American children. The three emotion facets (coping, inhibition, and dysregulation) were regressed onto the CDI-S scale and the YSR Aggression subscale. Given the prior analyses that indicated a varying pattern of gender and developmental effects, age and gender were entered into the first step to control for these variables. Then, given the potentially important role of emotion frequency for sadness or anger in ER processes, this variable was entered in the second step to control for this influence. Finally, depending on the specific regression, the CSMS or the CAMS subscales were entered in the third step to determine their unique predictive role.

Emotion regulation predicting depressive symptomatology

Sadness regulation predicting to depressive symptomatology. For Ghanaian children, the overall model predicting sadness regulation to depressive symptoms was significant, $F(6, 132) = 3.17, p < .01$, and accounted for 12.6% of the variance. Examination of individual factors in the third step revealed that gender was significantly predictive of depressive symptoms ($Beta = .18$), such that girls reported more depressive symptoms. Frequency of sadness experience ($Beta = .23$) was also significantly predictive of depressive symptoms. Interestingly, none of the CSMS subscales were individually predictive of depressive symptoms.
For American children, the overall model predicting sadness regulation to depressive symptoms was significant, $F(6, 140) = 14.73, p < .001$, and accounted for 38.7% of the variance. Examination of individual factors in the third step revealed that frequency of sadness experience predicted depressive symptoms ($Beta = .41$) as did the Sadness Coping scale ($Beta = -.31$), such that more constructive responses to sadness experience predicted fewer depressive symptoms. (See Table 3 for more details regarding this regression analysis).

**Anger regulation predicting to depressive symptomatology.** For Ghanaian children, the overall model predicting anger regulation to depressive symptoms was significant, $F(6, 133) = 4.55, p < .001$, and accounted for 17.0% of the variance. Examination of individual factors in the third step revealed that age was significantly predictive of depressive symptoms ($Beta = .17$), such that older children reported more depressive symptoms. Gender was marginally predictive of depressive symptoms ($Beta = .14, p = .08$), such that girls reported more depressive symptoms. Both the Anger Coping scale ($Beta = -.19$) and the Anger Dysregulation scale ($Beta = .18$) were significantly predictive of depressive symptoms. That is, constructive responses to anger experience predicted fewer depressive symptoms and more overt displays of anger predicted higher levels of depressive symptoms.

For American children, the overall model predicting anger regulation to depressive symptoms was also significant, $F(6, 140) = 11.33, p < .001$, and accounted for 32.7% of the variance. Examination of individual factors in the third step revealed that frequency of anger experience predicted depressive symptoms ($Beta = .36$). The Anger Coping scale ($Beta = -.27$) and the Anger Inhibition scale ($Beta = .18$) were significantly predictive of depressive symptoms. That is, constructive responses to anger experience predicted fewer depressive symptoms, while the inhibition of anger experience predicted higher levels of depressive symptoms. As in Ghana,
gender was marginally predictive of depressive symptoms ($\beta = .13, p = .07$), such that girls reported more depressive symptoms (see Table 4).

**Emotion regulation predicting aggression behaviors**

*Sadness regulation predicting to aggression behaviors.* For Ghanaian children, the overall model predicting sadness regulation to aggression behaviors was not significant, $F(6, 98) = .91, p = .49$.

However, for American children, the overall model predicting sadness regulation to aggression behaviors was significant, $F(6, 140) = 6.27, p < .001$, and accounted for 21.2% of the variance. Examination of individual factors in the third step revealed that gender predicted aggression behaviors ($\beta = -.22$), such that boys reported more aggression behaviors. The Sadness Coping scale ($\beta = -.31$) was also significantly inversely predictive of aggression. Both frequency of sadness ($\beta = .14, p = .09$) and the Sadness Dysregulation scale ($\beta = .15, p = .07$) were marginally predictive of aggression behaviors (see Table 5).

*Anger regulation predicting to aggression behaviors.* For Ghanaian children, the overall model predicting anger regulation to aggression behaviors was significant, $F(6, 99) = 3.54, p < .01$, and accounted for 17.7% of the variance. Examination of individual factors in the third step revealed that the Anger Coping scale ($\beta = -.27$) was significantly inversely predictive of aggression behaviors such that more self-controlled responses to anger was predictive of fewer aggressive behaviors. Both frequency of anger ($\beta = .17, p = .09$) and the Anger Dysregulation scale ($\beta = .17, p = .08$) were marginally predictive of aggression behaviors.

For American children, the overall model predicting anger regulation to depressive symptoms was also significant, $F(6, 140) = 26.73, p < .001$, and accounted for 53.4% of the variance. Examination of individual factors in the third step revealed that frequency of anger
experience predicted aggression behaviors \((\text{Beta} = .30)\). After controlling for age, gender, and anger frequency, the Anger Coping scale \((\text{Beta} = -.21)\) and the Anger Dysregulation scale \((\text{Beta} = .37)\) were significantly predictive of aggression behaviors such that less control over anger and more overt displays of anger predicted higher self-reports of aggressive behavior (see Table 6).

**Discussion**

Overall, an interesting pattern of findings emerged that indicated differences but also similarities between Ghanaian and American children’s self-report of their emotion management and links to symptoms of depression and aggression. These findings confirm and bolster past theory (Saarni, 1989) and empirical evidence (e.g., Cole et al., 2002; Raval et al., 2007) that the influence of social and cultural context is salient in emotional experience and expression. Moreover, differences as a function of nationality, gender, and/or age group were found for emotion type, regulatory behavior, frequency of emotion, and internalizing and externalizing behaviors. Thus, it appears that the components of emotional experience (i.e., type, frequency, regulation skills) do not exist in isolation and are influenced by the surrounding cultural framework of society. The following discussion highlights the central findings from this research, organized in three sections: emotion regulation, links between ER and mental health, and gender and developmental findings.

**Emotion Regulation**

We hypothesized that there would be nationality differences between Ghanaian and American youth in their self-report of frequency of and strategies to manage sadness and anger. Children in both countries reported similar frequency of sadness experience, but American children reported feeling angry more often than Ghanaian children. Regarding sadness, although the use of sadness inhibition strategies did not differ between countries, nationality differences
were found for sadness coping and sadness dysregulation. In comparison to American children, Ghanaian children reported using effortful control strategies (i.e., sadness coping) to respond to sadness less frequently and displaying sadness in overt ways (i.e., sadness dysregulation) more frequently. In terms of anger, children from both countries reported similar frequencies of anger coping and inhibition, but Ghanaian children reported significantly higher frequencies of anger dysregulation.

Based on personal observations, Ghanaians appeared to express emotion (particularly anger and happiness) frequently and in very obvious, overt ways that were quite discrepant from the emotional displays observed and documented in research in middle-class, White America (Haga, Kraft, & Corby, 2009). As such, it is not surprising that Ghanaian children reported more frequent displays of overt sadness and anger than American children. It may be that Ghanaians are more accepting of overt expressions of emotion in general, as observed by the researcher. Unlike other collectivistic cultures where the expression of negative emotion may be construed as harmful to interpersonal relationships (Mesquita et al., 2002), Ghanaian culture appears to encourage open emotional expression. In reference to the specific findings from this current research, it must be considered that in America, the behaviors of “yelling” or “stomping around” when angry is considered “dysregulated,” whereas in Ghana, it appears that this expression of emotion may be considered normal. As such, based on personal observation, there did not appear to be any consequences to children when they did express anger overtly unless they were in the classroom where strict discipline and decorum were emphasized. Thus, our measures of emotion dysregulation may not be applicable or sensitive to capturing emotion expression that is dysfunctional in Ghanaian culture.

Somewhat surprisingly, given the above findings on overt expression, American children
reported feeling angry more often than Ghanaian children. It was anticipated that Ghanaian children would report greater frequencies of anger experience because based on observation, they appear to express anger overtly more often than American children. However, because European American culture does not encourage blatant anger expression (in fact, this behavior is labeled “dyregulated”), it is feasible that higher frequencies of anger experience exist even in conjunction with lower frequencies of “dysregulation”. That is, Ghanaians may show more unconcealed displays of anger, but this is likely because it is more culturally acceptable to do so, not because they feel angry more often than American children. Or it may be that this finding is based on a reporting bias in which Ghanaian children are less aware of when they feel angry because this emotion appears to be more acceptable to express than in the United States. Therefore, when feeling mild to moderate levels of anger intensity, this experience may not register on Ghanaians’ “anger frequency meter”.

Although it was predicted that American children would inhibit their sad and angry emotions more than Ghanaian children in order to display positive affect and satisfy a desirable cultural norm, no nationality differences were found for either emotion. However, when examining effortful control over displays of emotion, Ghanaian children reported less control over sadness than did Americans with no differences for anger. In general, it appears that the cultural rules governing the expression of sadness in Ghanaian culture are different than those in American culture, which is likely due to differing socialization influences and cultural values regarding sadness. That is, based on observation, sadness was rarely seen in day-to-day interactions leading to the speculation that sadness expression may not be as accepted in Ghanaian culture as is anger expression.

To explore this interpretation further, additional data analyses were conducted using an
emotion socialization measure not discussed previously in this research (see Appendix E). This measure asks children to report on their primary caregiver’s response (primarily mothers in this sample) to expressions of sadness. Compared to American children, Ghanaian children reported that when they feel “sad or down” their parents are too busy to get involved with them, often tell them to grow up, give them a disapproving look, show them they do not like them being sad, and punish them[^1]. These parental response behaviors may play a role in the under-utilization of sadness coping strategies through both direct and indirect messages that sadness expression is unacceptable in this culture. It is possible that the lack of attention (indirect socialization) parents pay to children when they are experiencing sadness prevents Ghanaian children from learning and understanding the value of expressing and coping with sadness experience. If caregivers are neither modeling adaptive ways to respond to sadness nor involving themselves in their children’s sadness experiences, it is unlikely that children will learn to cope constructively with their sadness. The functionalist theory of emotion (Campos et al., 1994) states that the function of sadness is to elicit social support; this does appear to be the case in Ghana, at least when considering parental support. If Ghanaian children do not learn how to cope with sadness, it is possible that they may choose to externalize their experience of sadness and express it as anger; an emotion for which they demonstrate comparable frequencies of “coping” when compared to American children. If Ghanaian children see anger expression and regulation modeled more often in their daily lives, anger may be the emotion they are more comfortable experiencing and expressing. Clearly, more research is needed to better understand the nature and role of both of these emotions in Ghanaian culture.

Links between ER and Mental Health

We next hypothesized that the relationship between ER and mental health in Ghanaian
and American children would differ by country. Analyses revealed both similarities and differences in these relations. Specifically, in both countries anger regulation predicted to depression such that the effortful control of anger expression was associated with fewer depressive symptoms. Anger regulation also predicted to aggression in both countries such that effortful control over anger was related to fewer aggression symptoms whereas the overt display of anger predicted to more aggressive behaviors. As predicted, frequency of sadness predicted to depressive symptoms and frequency of anger predicted to aggressive behaviors for both Ghanaian and American children.

Nationality differences were found most frequently in the relation between sadness regulation and mental health. Children who reported greater frequencies of constructive sadness coping also reported fewer depressive symptoms in America, although this same relationship was not replicated in Ghana. Further, none of the sadness regulation scales predicted to aggression in Ghana, but in the United States sadness coping was inversely related to aggression and sadness dysregulation was predictive of aggression. Finally, nationality differences in the relationship between anger regulation and mental health emerged such that in America, but not Ghana, children who suppressed their anger more frequently also reported more depressive symptoms. On the other hand, in Ghana, but not America, overt displays of anger predicted to depressive symptoms.

Based on previous research in Western cultures (Eisenberg et al., 2001), we had hypothesized that the over-control of both sadness and anger and greater frequency of sadness experience would predict to symptoms of depression. Although greater frequency of sadness did predict to more symptoms of depression in both countries, this was not the case for inhibition behaviors. Anger inhibition did predict to depression for American children. Interestingly
however, neither the suppression of anger nor sadness predicted to depression for Ghanaian children. This finding serves as a prime example of the need to proceed with caution when applying Western norms to non-Western cultures. Although the overregulation of emotion has been consistently shown to predict to internalizing problems in Western society (e.g., Garnefski et al., 2005; Zeman et al., 2006), in this sample of Ghanaian children no such relationship was found. Western models do not always translate to populations in other parts of the world.

A finding that had not been predicted emerged such that American children who reported responding to sadness with self-control strategies (sadness coping) also reported fewer depressive symptoms. This is consistent with literature which suggests that ER skills are associated with fewer psychological difficulties (Eisenberg et al., 2007). In Ghana, there was no significant relation between sadness coping and depression. This may be because as suggested above, Ghanaian children are socialized to cope with sadness in different ways than are American children and thus, the linkage between coping with sadness and depression is not as clear. Thus, this regulation strategy may not be salient to the development, maintenance, or exacerbation of depressive behaviors in Ghanaians.

Our hypothesis that the under-control of emotion would predict to externalizing behaviors was partially supported in both countries; specifically, overt displays of anger predicted to aggressive behaviors in Ghana and the USA. Interestingly, this relation between anger dysregulation and aggression explained more of the variance in the model for the American than the Ghanaian sample, although in general Americans reported fewer aggressive behaviors. Once again, this finding may have resulted from the use of culturally insensitive measures. First, while the overt display of anger is considered “dysregulated” in America, this may be a normative and adaptive form of expression in Ghana. Second, the aggression subscale measured behaviors that
are considered aggressive in Western cultures. However, in Ghana, similar behaviors may not be considered abnormal. For example, while the item “I tease others a lot” is considered relationally aggressive in America, in Ghana, teasing is a commonplace, acceptable form of social interaction. Additionally, two behaviors that Ghanaians reported more frequently than Americans were “I try to get a lot of attention,” and “I scream a lot”; neither of which are considered aggressive in Ghanaian culture. Conversely, a common aggressive behavior in Ghana is beating, an item that is not included in the aggression measure, and thus a type of culturally relevant aggressive behavior that was not evaluated. This measurement issue may also explain why the relation between frequency of anger and aggression was significant only for American children given that the aggressive behaviors Ghanaians frequently use when angry were not included in the aggression measure.

Further, using effortful control to cope with both sadness and anger was negatively predictive of aggression for American children, but not for Ghanaian children. Again, this finding replicates research using Western samples that indicates that having optimally-developed ER skills is protective against experiencing externalizing problems (Olson et al., 2009). However, this relation was not found for the Ghanaian sample, again highlighting the important role that culture can play when considering which factors (e.g., emotion regulation) place children at risk for or protect them from psychological problems.

**Gender and Developmental Findings**

We hypothesized that due to differing GEM (Gender Empowerment Measure) scores between the United States and African countries, gender differences in ER by nationality would emerge. However, we also expected that several gender and developmental findings would be consistent across cultures; specifically that boys would suppress sadness and girls would
suppress anger more than the opposite gender and that older children would demonstrate more constructive and culturally appropriate ER strategies than their younger counterparts.

In both Ghana and the United States, boys reported consciously and effortfully controlling their expressions of sadness more than girls. In both countries, girls reported overtly expressing their sadness more than boys. These findings are consistent with literature suggesting that girls express sadness more than boys (Zeman & Garber, 1996) and that across cultures, women cry more frequently than men (Becht & Vingerhoets, 2002). The frequency of crying study is particularly relevant as “I cry and carry on” is an item included in the measure of overt sadness expression.

Another interesting finding of the crying study was that gender differences in the frequency of crying in Ghana were significantly less than gender differences in the United States. In the present study, a similar pattern of gender differences were found for sadness frequency that involved the variables of nationality, gender, and age. In the United States, adolescent girls reported feeling sad more often than adolescent boys, but in Ghana, older girls and older boys reported similar frequencies of sadness experience which were in between the means of American boys and girls. It is possible that Americans are socialized to experience and express sadness in a more genderized manner as they age whereas the same is not true for Ghanaians. As such, these findings do dovetail the research by Becht and Vingerhoets (2002) in which there were more pronounced gender differences in rates of adult crying in Americans than Africans.

Interestingly, in this study, age differences were not found in the use of specific ER strategies, however, they did play a role in the relationship between ER and mental health. That is, older girls in both countries reported more depressive symptoms than older boys. Researchers examining developmental trends in the prevalence of depression have reported that by
adolescence, girls are twice as likely as boys to be depressed (Linehan et al., 1993; McGee et al., 1990). The gender differences reported here are consistent with this literature.

Research not only supports a link between girls and the development of internalizing problems, but also an association between boys and the development of externalizing problems (e.g., Dodge, Coie, & Lynam, 2006). In the present study, this finding was replicated in the American sample only, such that being a boy was significantly predictive of aggression. As mentioned previously, the lack of relation for the Ghanaian sample may be an artifact of using Western questionnaires that define aggression in ways that are not sensitive to assessing Ghanaian aggressive behaviors.

Limitations

Although this study provides an important contribution to the scant cross-cultural literature on ER in children, there are several limitations that merit comment and reduce the generalizability and validity of the findings. First, this study relied solely on self-report measures that are open to bias, social desirability, and invalid reporting. In future studies, data should be collected from parents and teachers in order to counteract the disadvantages of self-report. Second, the measures used in the present study have not been validated for use outside of Western cultures. As discussed above, they may be limited in their validity with respect to assessing the cognitions and behaviors of Ghanaian children as well as culturally acceptable displays of emotion. In particular, concern regarding the validity of the dysregulation subscales and the aggression subscale arose. Because overt displays of emotion are more culturally acceptable in Ghana, the dysregulation subscale may not measure culturally defined dysregulated behaviors in Ghanaian children. In terms of the aggression subscale, aggression items may not have accurately captured the forms of aggression displayed in Ghana. Finally, because the
researcher in Ghana was a Caucasian female visiting from a different culture, it is possible that
the children's responses were different than if they had been interviewed by a researcher from
their own culture. For example, seeking to win the researcher's approval may have influenced
children's answers during the interview process.

Suggestions for Future Research

Future studies should seek to sample children from different cultures and geographic
regions within Ghana in order to allow for greater generalizability of results. This study
examined Ghanaian children from predominately middle class, working families in a suburb of
the capitol. It would be important to see how the ER of children from more rural and
disadvantaged regions of Ghana would differ from the current sample. Likewise, future studies
should seek to gather a more diverse American sample in order to compare cultural emotional
differences in the United States. In addition, in the present study, gathering a larger African
American sample would have allowed for the influence of shared cultural heritage on ER
development to be examined through the comparison of Ghanaian and African American
children.

Further, because emotion socialization is likely to vary between cultures, both between
countries and within countries, it would be interesting to examine the role of parents and other
family members (e.g., siblings) in the socialization process. Particularly in Ghana, it was
observed that older siblings played a significant role in the raising and socializing of their
younger family members.

Concerning ER specifically, it would be interesting to investigate the relationship
between ER strategies and other types of internalizing and externalizing behaviors in addition to
depressive and aggressive symptomatology. And, investigating other negative emotions, such as
worry, or even positive emotions, such as happiness, would allow for more specific conclusions regarding the risk and protective role ER plays in psychosocial development. Not only should future studies measure ER quantitatively, but behavioral methods (e.g., observational studies) are necessary to fully understand the cultural norms relevant to emotional expression and regulation. Observation has the potential to explain and illuminate unanticipated research findings because it allows the researcher to examine specific emotional expression and regulation strategies in depth and in a variety of contexts (e.g., during interpersonal interactions, in school and home environments). Further, the duration, intensity, and frequency of emotion expression can be evaluated using this methodology.

In conclusion, research that examines individuals from a variety of cultures and contexts is necessary to further our understanding of emotional development processes in children and the variables that promote and facilitate healthy psychosocial functioning in both American and African contexts. Emotion regulation is a construct receiving increased attention in the field as research reveals significant relationships between emotion management and healthy psychological functioning (Cicchetti et al., 1995). These findings are limited in value however, if they cannot be applied to individuals from a variety of backgrounds and circumstances. As more research is conducted examining ER development across cultures, it will be possible to uncover patterns that will allow for advances in understanding the role of ER in children’s mental health across diverse populations.
References

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interpersonal, and individual considerations. *Emotional development and emotional


processes in the development of childhood behavioral problems (pp. 186-211). New York, NY US: Cambridge University Press.


Footnotes

1Table describing nationality differences in responses to the emotion socialization measure, *Emotions as a Child*, in which children reported on parental responses to expression of sadness. Data below considers children who indicated their mother to be the primary caregiver.

*Independent Sample t-test Comparing Ghanaian and American Responses to the Emotions as a Child Measure for Sadness*

<table>
<thead>
<tr>
<th>Item</th>
<th>Ghana</th>
<th>USA</th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Too busy to get involved with me</td>
<td>2.05 (1.34)</td>
<td>1.58 (1.00)</td>
<td>3.18**</td>
</tr>
<tr>
<td>Told me to grow up</td>
<td>2.26 (1.35)</td>
<td>1.53 (1.13)</td>
<td>4.63***</td>
</tr>
<tr>
<td>Found out what made me sad</td>
<td>3.48 (1.41)</td>
<td>3.63 (1.43)</td>
<td>-.83</td>
</tr>
<tr>
<td>Gave me a disapproving look</td>
<td>2.10 (1.35)</td>
<td>1.43 (.95)</td>
<td>3.90***</td>
</tr>
<tr>
<td>Ignored me</td>
<td>1.64 (1.78)</td>
<td>1.39 (1.03)</td>
<td>1.82</td>
</tr>
<tr>
<td>Helped me deal with the issue that made me sad</td>
<td>3.79 (1.21)</td>
<td>3.85 (1.35)</td>
<td>-.33</td>
</tr>
<tr>
<td>Showed me that he/she did not like me being sad.</td>
<td>3.79 (1.19)</td>
<td>2.98 (1.65)</td>
<td>4.40***</td>
</tr>
<tr>
<td>Comforted me</td>
<td>3.90 (1.21)</td>
<td>3.95 (1.36)</td>
<td>-.30</td>
</tr>
<tr>
<td>Punished me</td>
<td>1.41 (.95)</td>
<td>1.15 (.64)</td>
<td>2.55*</td>
</tr>
</tbody>
</table>

*Note.* *p* < .05; **p** < .01; ***p*** < .001.
Appendix A

Children’s Emotion Management Scale: **Sadness**

**Instructions:** Please circle the response that best describes your behavior when you are feeling *sad*.

<table>
<thead>
<tr>
<th></th>
<th>Statement</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>When I’m feeling sad, I can control my crying and carrying on.</td>
<td>Hardly Ever</td>
<td>Sometimes</td>
<td>Often</td>
</tr>
<tr>
<td>2</td>
<td>I hold my sad feelings in.</td>
<td>Hardly Ever</td>
<td>Sometimes</td>
<td>Often</td>
</tr>
<tr>
<td>3</td>
<td>I stay calm and don’t let sad things get to me.</td>
<td>Hardly Ever</td>
<td>Sometimes</td>
<td>Often</td>
</tr>
<tr>
<td>4</td>
<td>I whine/fuss about what’s making me sad.</td>
<td>Hardly Ever</td>
<td>Sometimes</td>
<td>Often</td>
</tr>
<tr>
<td>5</td>
<td>I hide my sadness.</td>
<td>Hardly Ever</td>
<td>Sometimes</td>
<td>Often</td>
</tr>
<tr>
<td>6</td>
<td>When I’m sad, I do something totally different until I calm down.</td>
<td>Hardly Ever</td>
<td>Sometimes</td>
<td>Often</td>
</tr>
<tr>
<td>7</td>
<td>I get sad inside but don’t show it.</td>
<td>Hardly Ever</td>
<td>Sometimes</td>
<td>Often</td>
</tr>
<tr>
<td>8</td>
<td>I can stop myself from losing control of my sad feelings.</td>
<td>Hardly Ever</td>
<td>Sometimes</td>
<td>Often</td>
</tr>
<tr>
<td>9</td>
<td>I cry and carry on when I’m sad.</td>
<td>Hardly Ever</td>
<td>Sometimes</td>
<td>Often</td>
</tr>
<tr>
<td>10</td>
<td>I try to calmly deal with what is making me sad.</td>
<td>Hardly Ever</td>
<td>Sometimes</td>
<td>Often</td>
</tr>
<tr>
<td>11</td>
<td>I do things like mope around when I’m sad.</td>
<td>Hardly Ever</td>
<td>Sometimes</td>
<td>Often</td>
</tr>
<tr>
<td>12</td>
<td>I’m afraid to show my sadness.</td>
<td>Hardly Ever</td>
<td>Sometimes</td>
<td>Often</td>
</tr>
</tbody>
</table>
## Appendix B

Children’s Emotion Management Scale: **Anger**

**Instructions:** Please circle the response that best describes your behavior when you are feeling mad.

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. When I am feeling mad, I control my temper.</td>
<td>Hardly Ever 1</td>
<td>Sometimes 2</td>
<td>Often 3</td>
</tr>
<tr>
<td>2. I hold my anger in.</td>
<td>Hardly Ever 1</td>
<td>Sometimes 2</td>
<td>Often 3</td>
</tr>
<tr>
<td>3. I stay calm and keep my cool when I am feeling mad.</td>
<td>Hardly Ever 1</td>
<td>Sometimes 2</td>
<td>Often 3</td>
</tr>
<tr>
<td>4. I do things like slam doors when I am mad.</td>
<td>Hardly Ever 1</td>
<td>Sometimes 2</td>
<td>Often 3</td>
</tr>
<tr>
<td>5. I hide my anger.</td>
<td>Hardly Ever 1</td>
<td>Sometimes 2</td>
<td>Often 3</td>
</tr>
<tr>
<td>6. I attack whatever it is that makes me mad</td>
<td>Hardly Ever 1</td>
<td>Sometimes 2</td>
<td>Often 3</td>
</tr>
<tr>
<td>7. I get mad inside but I don’t show it.</td>
<td>Hardly Ever 1</td>
<td>Sometimes 2</td>
<td>Often 3</td>
</tr>
<tr>
<td>8. I can stop myself from losing my temper.</td>
<td>Hardly Ever 1</td>
<td>Sometimes 2</td>
<td>Often 3</td>
</tr>
<tr>
<td>9. I say mean things to others when I am mad.</td>
<td>Hardly Ever 1</td>
<td>Sometimes 2</td>
<td>Often 3</td>
</tr>
<tr>
<td>10. I try to calmly deal with what is making me feel mad.</td>
<td>Hardly Ever 1</td>
<td>Sometimes 2</td>
<td>Often 3</td>
</tr>
<tr>
<td>11. I’m afraid to show my anger.</td>
<td>Hardly Ever 1</td>
<td>Sometimes 2</td>
<td>Often 3</td>
</tr>
</tbody>
</table>
Appendix C

**Child Depression Inventory Short Form (CDI-S)**

Please place a check mark next to the sentence that best describes you.

1. ___ I am sad once in a while.
   ____ I am sad many times.
   ____ I am sad all the time.

2. ___ Nothing will ever work out for me.
   ____ I am not sure if things will work out for me.
   ____ Things will work out for me OK.

3. ___ I do most things OK.
   ____ I do many things wrong.
   ____ I do everything wrong.

4. ___ I like myself.
   ____ I do not like myself.
   ____ I hate myself.

5. ___ I feel like crying every day.
   ____ I feel like crying many days.
   ____ I feel like crying once in a while

6. ___ Things bother me all the time.
   ____ Things bother me many times.
   ____ Things bother me once in a while.

7. ___ I look OK.
   ____ There are some bad things about my looks.
   ____ I look ugly.

8. ___ I do not feel alone.
   ____ I feel alone many times.
   ____ I feel alone all the time.

9. ___ I have plenty of friends.
   ____ I have some friends but wish I had more.
   ____ I do not have any friends.

10. ___ Nobody really loves me.
    ____ I am not sure if anybody loves me.
    ____ I am sure that somebody loves me.
Appendix D

**Youth Self-Report Aggression Subscale**

<table>
<thead>
<tr>
<th></th>
<th>Not True</th>
<th>Somewhat or Sometimes True</th>
<th>Very True or Often True</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I argue a lot.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>2. I am mean to others.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>3. I try to get a lot of attention.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>4. I destroy my own things.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>5. I destroy things belonging to others.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>6. I disobey my parents.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>7. I disobey at school.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>8. I get in many fights.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>9. I physically attack other people.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>10. I scream a lot.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>11. I am stubborn.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>12. My moods or feelings change suddenly.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>13. I am suspicious.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>14. I tease others a lot.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>15. I have a hot temper.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>16. I threaten to hurt people.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>17. I am louder than other kids.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>
Appendix E

**Emotions as a Child (Self-Rating Scale)**

A. Who takes care of you the most at home? ___________________________________

B. Over the past MONTH, when you have been **SAD** or **DOWN**, what did this parent do?

<table>
<thead>
<tr>
<th></th>
<th>Not at all like my parent</th>
<th>A little like my parent</th>
<th>Somewhat like my parent</th>
<th>Like my parent</th>
<th>A lot like my parent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>When I was <strong>sad</strong>, my parent was too busy to get involved with me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2.</td>
<td>When I was <strong>sad</strong>, my parent told me to grow up.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3.</td>
<td>When I was <strong>sad</strong>, my parent found out what made me sad.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4.</td>
<td>When I was <strong>sad</strong>, my parent gave me a disapproving look.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5.</td>
<td>When I was <strong>sad</strong>, my parent ignored me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6.</td>
<td>When I was <strong>sad</strong>, my parent helped me deal with the issue that made me sad.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>7.</td>
<td>When I was <strong>sad</strong>, my parent showed me that he/she did <strong>NOT</strong> like me being sad.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>8.</td>
<td>When I was <strong>sad</strong>, my parent comforted me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>9.</td>
<td>When I was <strong>sad</strong>, my parent punished me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
C. Over the past MONTH, when you have been **ANGRY** or feeling **FRUSTRATED**, what did this parent do?

<table>
<thead>
<tr>
<th></th>
<th>Not at all like my parent</th>
<th>A little like my parent</th>
<th>Somewhat like my parent</th>
<th>Like my parent</th>
<th>A lot like my parent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>When I was <strong>angry</strong>, my parent was too busy to get involved with me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2.</td>
<td>When I was <strong>angry</strong>, my parent told me to grow up.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3.</td>
<td>When I was <strong>angry</strong>, my parent found out what made me angry.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4.</td>
<td>When I was <strong>angry</strong>, my parent gave me a disapproving look.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5.</td>
<td>When I was <strong>angry</strong>, my parent ignored me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6.</td>
<td>When I was <strong>angry</strong>, my parent helped me deal with the issue that made me angry.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>7.</td>
<td>When I was <strong>angry</strong>, my parent showed me that he/she did <strong>NOT</strong> like me being angry.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>8.</td>
<td>When I was <strong>angry</strong>, my parent comforted me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>9.</td>
<td>When I was <strong>angry</strong>, my parent punished me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
Table 1

*Descriptive Statistics for Participants in Younger and Older Age Groups in Ghana and the United States of America*

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Younger Age Group</th>
<th>Older Age Group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ghana</td>
<td>USA</td>
</tr>
<tr>
<td>Participants, n</td>
<td>82</td>
<td>109</td>
</tr>
<tr>
<td>Age, mean (SD), years</td>
<td>9.72 (1.14)</td>
<td>9.38 (1.07)</td>
</tr>
<tr>
<td>Males, n (%)</td>
<td>38 (46.3%)</td>
<td>50 (45.9%)</td>
</tr>
<tr>
<td>Females, n (%)</td>
<td>44 (53.7%)</td>
<td>59 (54.1%)</td>
</tr>
</tbody>
</table>

*Note.* The younger age group is comprised of children 8-11 years old. The older age group is comprised of children 12-15 years old.
Table 2
Independent Sample t-test Comparing African Americans and European Americans on the Variables of Sadness and Anger Regulation, CDI-S Scores, and YSR Aggression Subscale Scores

<table>
<thead>
<tr>
<th>Variable</th>
<th>African American</th>
<th>European American</th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M (SD)</td>
<td>M (SD)</td>
<td></td>
</tr>
<tr>
<td>Participants, n</td>
<td>29</td>
<td>97</td>
<td></td>
</tr>
<tr>
<td>Sadness Regulation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coping</td>
<td>10.66 (2.58)</td>
<td>11.29 (2.18)</td>
<td>1.32</td>
</tr>
<tr>
<td>Inhibition</td>
<td>8.45 (1.94)</td>
<td>8.56 (1.94)</td>
<td>.26</td>
</tr>
<tr>
<td>Dysregulation</td>
<td>5.07 (1.65)</td>
<td>5.02 (1.51)</td>
<td>-.15</td>
</tr>
<tr>
<td>Anger Regulation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coping</td>
<td>7.76 (2.41)</td>
<td>8.59 (2.37)</td>
<td>1.67</td>
</tr>
<tr>
<td>Inhibition</td>
<td>6.93 (2.46)</td>
<td>7.34 (2.21)</td>
<td>.85</td>
</tr>
<tr>
<td>Dysregulation</td>
<td>5.41 (1.78)</td>
<td>4.82 (1.57)</td>
<td>-1.71</td>
</tr>
<tr>
<td>CDI-S</td>
<td>3.10 (3.89)</td>
<td>2.53 (2.73)</td>
<td>-.75</td>
</tr>
<tr>
<td>YSR Aggression subscale</td>
<td>9.90 (7.39)</td>
<td>7.58 (5.62)</td>
<td>-1.81</td>
</tr>
</tbody>
</table>

Note.  *p < .05; **p < .01; ***p < .001.
Hierarchical Regression Analyses Predicting Depressive Symptoms by Sadness Frequency and Sadness Regulation Factors in Ghana and the United States of America

<table>
<thead>
<tr>
<th></th>
<th>Ghana</th>
<th></th>
<th></th>
<th>USA</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B (SE B)</td>
<td>β</td>
<td>ΔR²</td>
<td>B (SE B)</td>
<td>β</td>
<td>ΔR²</td>
</tr>
<tr>
<td>Step 1</td>
<td>.06*</td>
<td></td>
<td></td>
<td>.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>.18 (.10)</td>
<td>.15†</td>
<td></td>
<td>-.05 (.12)</td>
<td>-.03</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>.81 (.37)</td>
<td>.18*</td>
<td></td>
<td>.11 (.42)</td>
<td>.02</td>
<td></td>
</tr>
<tr>
<td>Step 2</td>
<td>.05**</td>
<td></td>
<td></td>
<td>.27***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sadness Frequency</td>
<td>.39 (.15)</td>
<td>.23**</td>
<td></td>
<td>1.16 (.21)</td>
<td>.41***</td>
<td></td>
</tr>
<tr>
<td>Step 3</td>
<td>.02</td>
<td></td>
<td></td>
<td>.10**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sadness Coping</td>
<td>-.08 (.12)</td>
<td>-.06</td>
<td></td>
<td>-.40 (.09)</td>
<td>-.31**</td>
<td></td>
</tr>
<tr>
<td>Sadness Inhibition</td>
<td>.15 (.10)</td>
<td>.13</td>
<td></td>
<td>.16 (.11)</td>
<td>.10</td>
<td></td>
</tr>
<tr>
<td>Sadness Dysregulation</td>
<td>-.09 (.13)</td>
<td>-.06</td>
<td></td>
<td>.14 (.14)</td>
<td>.07</td>
<td></td>
</tr>
</tbody>
</table>

*Note.* †p < .10; *p < .05; **p < .01; ***p < .001. Results are taken from the third step. Depressive symptoms were assessed by the Children’s Depression Inventory-Short Form; sadness regulation factors were assessed by the Children’s Sadness Management Scales.
Table 4
Hierarchical Regression Analyses Predicting Depressive Symptoms by Anger Frequency and Anger Regulation Factors in Ghana and the United States of America

<table>
<thead>
<tr>
<th></th>
<th>Ghana</th>
<th>USA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B (SE B)</td>
<td>β</td>
</tr>
<tr>
<td>Step 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>.21 (.10)</td>
<td>.17*</td>
</tr>
<tr>
<td>Gender</td>
<td>.65 (.37)</td>
<td>.14</td>
</tr>
<tr>
<td>Step 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anger Frequency</td>
<td>.26 (.16)</td>
<td>.14</td>
</tr>
<tr>
<td>Step 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anger Coping</td>
<td>-.26 (.118)</td>
<td>-.19*</td>
</tr>
<tr>
<td>Anger Inhibition</td>
<td>.03 (.10)</td>
<td>.03</td>
</tr>
<tr>
<td>Anger Dysregulation</td>
<td>.26 (.12)</td>
<td>.18*</td>
</tr>
</tbody>
</table>

Note. $^1 p < .10; ^* p < .05; ^{**} p < .01; ^{***} p < .001$. Results are taken from the third step. Depressive symptoms were assessed by the Children’s Depression Inventory-Short Form; anger regulation factors were assessed by the Children’s Anger Management Scales.
Table 5

*Hierarchical Regression Analyses Predicting Aggression by Sadness Frequency and Sadness Regulation Factors in Ghana and the United States of America*

<table>
<thead>
<tr>
<th></th>
<th>Ghana</th>
<th></th>
<th>USA</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B (SE B)</td>
<td>β</td>
<td>ΔR²</td>
<td>B (SE B)</td>
</tr>
<tr>
<td><strong>Step 1</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>.03 (.28)</td>
<td>.01</td>
<td></td>
<td>.02 (.27)</td>
</tr>
<tr>
<td>Gender</td>
<td>.14 (.83)</td>
<td>.02</td>
<td></td>
<td>-2.70 (.98)</td>
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<tr>
<td><strong>Step 2</strong></td>
<td></td>
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<td>.05**</td>
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<tr>
<td>Sadness Frequency</td>
<td>.72 (.36)</td>
<td>.20*</td>
<td></td>
<td>.83 (.48)</td>
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<tr>
<td><strong>Step 3</strong></td>
<td></td>
<td>.00</td>
<td></td>
<td>.12***</td>
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<tr>
<td>Sadness Coping</td>
<td>-.04 (.25)</td>
<td>-.02</td>
<td></td>
<td>-.83 (.22)</td>
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<tr>
<td>Sadness Inhibition</td>
<td>-.04 (.23)</td>
<td>-.02</td>
<td></td>
<td>.35 (.25)</td>
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<tr>
<td>Sadness Dysregulation</td>
<td>.19 (.30)</td>
<td>.07</td>
<td></td>
<td>.59 (.32)</td>
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</tbody>
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*Note.* †p < .10; *p < .05; **p < .01; ***p < .001. Results are taken from the third step. Aggression was assessed by the Aggression subscale of the Youth Self Report; sadness regulation factors were assessed by the Children’s Sadness Management Scales.
Table 6

*Hierarchical Regression Analyses Predicting Aggression by Anger Frequency and Anger Regulation Factors in Ghana and the United States of America*

<table>
<thead>
<tr>
<th></th>
<th>Ghana</th>
<th></th>
<th></th>
<th>USA</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B (SE B)</td>
<td>β</td>
<td>∆R²</td>
<td>B (SE B)</td>
<td>β</td>
<td>∆R²</td>
</tr>
<tr>
<td>Step 1</td>
<td>.00</td>
<td>.02</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
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<td>.06</td>
<td></td>
<td>.20 (.21)</td>
<td>.06</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
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<td>.04</td>
<td></td>
<td>-.89 (.74)</td>
<td>-.07</td>
<td></td>
</tr>
<tr>
<td>Step 2</td>
<td>.07**</td>
<td>.37***</td>
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<tr>
<td>Anger Frequency</td>
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<td></td>
<td>1.46 (.38)</td>
<td>.30***</td>
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</tr>
<tr>
<td>Step 3</td>
<td>.10**</td>
<td>.15***</td>
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</tr>
<tr>
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<td>-.27**</td>
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<td>-.56 (.23)</td>
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</tr>
<tr>
<td>Anger Inhibition</td>
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<td>-.01</td>
<td></td>
<td>.14 (.20)</td>
<td>.05</td>
<td></td>
</tr>
<tr>
<td>Anger Dysregulation</td>
<td>.43 (.25)</td>
<td>.17*</td>
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<td>1.38 (.28)</td>
<td>.37***</td>
<td></td>
</tr>
</tbody>
</table>

*Note.*  ¹p < .10;  *p < .05;  **p < .01;  ***p < .001.  Results are taken from the third step. Aggression was assessed by the Aggression subscale of the Youth Self Report; anger regulation factors were assessed by the Children’s Anger Management Scales.