Children’s emotion regulation across and within nations: A comparison of Ghanaian, Kenyan, and American youth

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This research examined national, regional, developmental, and gender differences in children’s reported management of anger and sadness. Participants (8–15 years) were 103 Ghanaian children from a village setting, 142 Ghanaian children from a middle-class urban context, 106 Kenyan children from an impoverished urban context, and 170 children from the United States in lower to middle-class urban areas (58.8% Caucasian). Children completed the Children’s Anger and Sadness Management Scales (Zeman, Shipman, & Penza-Clyve, 2001) to assess emotion management (i.e., effortful control, over control, under control). Comparisons across nations indicated that Ghanaian youth reported more overt anger expression than youth from Kenya and the United States and less anger inhibition than Kenyan youth. U.S. children reported less overt expression and more constraint over sadness than Kenyan and Ghanaian children, although Kenyans reported being calmer when experiencing sadness than Ghanaian and American youth. Comparing Ghanaian regional contexts, village children reported more anger control than urban children. Regardless of nationality, boys reported more control over sadness than girls who reported more under control of sadness and more over control of anger than boys. Future research is needed to build on these descriptive, preliminary findings examining under-studied cross-national contexts.

Environmental influences are important to consider when investigating children’s development in general and emotion regulation in particular (Zeman, Cassano, Perry-Parrish, & Stegall, 2006). For example, emotional expression and experience are influenced by societal display rule norms (Saarni, 1999), with such norms shaped by environmental factors (e.g., socioeconomic, cultural norms) that vary across and within nations (Cole, Tamang, & Shrestha, 2006; Mesquita & Frijda, 1992). Although

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certain universal components of emotional expression have been documented (e.g., physiological reactions, certain facial displays; Ekman, 1999; Ekman & Friesen, 1971), more recent research has sought to augment theories of emotion by considering their subjective nature and the environmental influences that shape emotional experiences (Markus & Kitayama, 1994). For instance, research indicates that certain aspects of emotions may be biologically hardwired (Ekman, 1999), yet the contexts in which emotions are elicited and the meanings associated with these experiences are influenced strongly by social contexts (Kim-Prieto & Eid, 2004; Markus & Kitayama, 1994). Although there is a general consensus among emotion researchers that both universal and environment-specific factors contribute to emotional expression, cross-national research on emotion regulation in children is in its infancy, particularly in developing nations, highlighting the need to elucidate which emotion regulation patterns are context specific and which may be more universal in nature.

Children’s development in Western countries has been studied for decades, and the field of emotional development has gained increasing attention in the past two decades (Adrian, Zeman, & Veits, 2011). However, there is a paucity of research examining central developmental processes in children raised in African countries and, to our knowledge, no research comparing emotion regulation strategies within and across African nations. In their paper documenting the existing and potential contributions of African research on the field of developmental psychology, Super, Harkness, Barry, and Zeitlin (2011) argue the importance of studying children from different socio-cultural environments. From a ‘developmental-niche’ conceptualization (Super & Harkness, 2002), children’s environments are comprised of synergistic subsystems (e.g., physical environment, customs regarding parenting), thus, studying ‘local’ (i.e., specific) African environments can inform ‘global’ child development research (Super et al., 2011). As there are numerous disparities between the social, physical, and economic environments for a child raised in the United States versus a developing country in Africa (e.g., cultural beliefs, schools, resources), it is plausible that differences in emotion regulation would be present given the strong influence that socio-contextual factors have on children’s developing emotion skills (Cole et al., 2006).

Socioeconomic status (SES) is a particular socio-contextual factor that affects a child’s development. Literature from Western nations provides overwhelming evidence of the deleterious effects poverty has on children’s overall development, including socioemotional functioning (Buckner, Bassuk, Weinreb, & Brooks, 1999; Evans & English, 2002; Raver, 2004). Thus, the fact that 50% of individuals in sub-Saharan Africa nations fall below the poverty level (as estimated based on World Bank Policy of families making less than $1.25 in U.S. dollars a day; World Bank, 2010) in comparison to 14% of individuals in the United States (as assessed in 2009; U.S. Census Bureau, 2010), provides an opportunity to compare the effects of disparate socioeconomic environments on an aspect of development (i.e., emotion regulation) that is known to be sensitive to contextual effects. Children raised in poverty in the United States are more likely to experience residential instability, violence in their neighbourhoods, and harsh, punitive parenting than their middle-income counterparts (McLoyd, 1998). Likewise, an increased exposure to such environmental stressors has been associated with emotion regulation difficulties in U.S. youth (Gilliom, Shaw, Beck, Schonberg, & Lukon, 2002; Kliewer, Reid-Quinones, Shields, & Foutz, 2009). Additionally, anthropological research in the United States has demonstrated that attitudes about emotions and emotional displays vary among social classes, suggesting that socioeconomic differences within a nation may influence children’s emotion regulation development (Kusserow, 1999; Miller, 1986).
Thus, one might expect emotional expressivity differences to emerge as disparities in socioeconomic contexts increase given the specific social norms associated with each context. To date, however, there has been no empirical documentation of such differences using samples of children living in African nations. The primary goal of this study, therefore, was to explore differences in children’s report of emotion regulation behaviours across nations (i.e., Ghana, Kenya, United States) and within a nation (i.e., rural village and urban area in Ghana).

**Emotion regulation**

As emotion regulation is an emerging field of study, operational definitions are of key importance to how emotion processes are studied and understood within specific environmental contexts. In this paper, emotion regulation is defined as ‘[t]he process of initiating, avoiding, inhibiting, maintaining, or modulating the occurrence, form, intensity, or duration of internal feeling states . . . ’ (Eisenberg & Spinrad, 2004, p. 338). As such, emotion regulation is not simply the suppression or control of emotion, but is a dynamic process that involves the management and alteration of emotional behaviour. The present study focuses on three facets of emotion regulation [i.e., effortful control, over control, under control] because they aptly reflect different aspects of the dynamic nature of emotion management (Zeman, Shipman, & Penza-Clyve, 2001). Effortful control, as applied to emotion regulation, involves wilful attention to an emotion-eliciting situation in order to respond in an adaptive, thoughtful manner (Rothbart & Bates, 2006). Over control involves the suppression or inhibition of a felt emotion and is more inflexible and rigid than effortful control. In contrast, under control reflects an impulsive or reactive, overt response to the experience of a particular emotion (Zeman et al., 2001). Using adult samples, methods for managing emotional expression have been found to vary in acceptability based on the environment in which one is raised (Matsumoto, Takeuchi, Andayani, Kouznetsova, & Krupp, 1998). Further, based on the functionalist perspective (Campos, Mumme, Kermoian, & Campos, 1994), emotion regulation processes differ by the type of emotion experienced given that emotional experience is contextually bound; thus, goals and action tendencies may differ based on the type of emotion experienced. Anger and sadness were chosen for study given that they represent common, universal childhood experiences (Ekman & Friesen, 1971).

Research in Western nations suggests that patterns of emotion regulation in children vary depending on child age and gender. Regarding age, U.S. research findings suggest that children’s emotion regulation skills improve with development and are simultaneously and reciprocally influenced by changes in cognitive, biological, and social realms (Saarni, 1999). For example, based on literature examining Caucasian children, as early as 3 and 4 years of age, children begin to exert rudimentary control over their overt expressions of negative emotion (Cole, 1986). This ability increases with age, such that older children report expressing the emotions of anger and sadness less often than younger children, particularly to their peers (Zeman & Garber, 1996). During middle childhood, around age 10, children typically have developed the necessary skills to manage their emotions deliberately and effectively in response to social demands (Saarni, 1999; Zeman et al., 2006). As children progress into adolescence, they may engage in more emotion regulation behaviours than in middle childhood in response to the increasing complexity of social demands inherent in the peer context. For instance, adolescents in the eighth grade reported exerting more control over sadness and anger...
than fifth-grade children because they expected less social support from their peers in response to these emotional displays (Zeman & Shipman, 1997).

Specifically, the development of effortful emotion control begins early in childhood development and is influenced by a variety of intrinsic (biological) and extrinsic (environmental) factors (for a review, see Fox & Calkins, 2003). Intrinsic factors, germane to the development of effortful control as early as the first year of life, include the ability to regulate attention and engage in inhibitory control. As children age, development of these cognitive processes facilitates the control of emotion, whereas under development is likely to impede effortful control. Extrinsic influences include caregiver responsiveness, maternal controlling behaviour, and peer acceptance, to name a few (e.g., Gottman, Katz, & Hooven, 1996; Zeman & Shipman, 1997). Further, research on Western samples has demonstrated that emotion regulation characterized by under or over control as opposed to effortful control is associated with risk for psychological maladjustment including internalizing and externalizing problems (Bowie, 2010; Eisenberg, Hofer, & Vaughan, 2007; Olson, Sameroff, Lunkenheimer, & Kerr, 2009). What is considered maladaptive behaviour in one nation or environment, however, cannot automatically be considered maladaptive in another. Within a developmental psychopathology framework, multiple pathways can produce a given outcome (e.g., psychopathology) just as one pathway can lead to disparate outcomes depending on contextual factors (e.g., Rutter & Sroufe, 2000). These contextual influences operate on multiple levels (e.g., from genes to culture). Therefore, the pathway(s) between emotional over and under control and psychological symptoms cannot be generalized to non-Western nations because research does not yet exist to support such a generalization.

In addition to developmental differences, research has indicated that emotion regulation processes differ by gender. For example, Caucasian boys who display sadness are likely to violate a societal emotion display rule and are considered ‘unmanly’, whereas expressing sadness is more socially acceptable for girls (Brody, 2000). Other research has demonstrated that girls express feelings of sadness and pain more than boys because boys anticipate more negative interpersonal consequences (e.g., teasing) when expressing vulnerable types of emotions (Zeman & Garber, 1996). Interestingly, Caucasian girls reported more over control of anger than boys, even when both boys and girls reported feeling equal amounts of anger (Underwood, Coie, & Herbsman, 1992). It is notable that boys and girls differ not only in the frequency but also the manner in which they express specific negative emotions. For instance, girls are more likely to substitute an exaggerated display of positive emotion for experienced negative emotion, whereas boys are more likely to substitute neutral expressions (Cole, 1986). Additionally, in Western nations, adolescence is a time when gender norms become more pronounced, resulting in an increase in gender differences in emotion regulation patterns (Perry-Parrish & Zeman, 2011; Zeman & Shipman, 1997). For example, based on both self-report and peer report, adolescent boys were more likely to control sadness expression than adolescent girls who were more likely to report expressing sadness through crying and other overt behaviours (Perry-Parrish & Zeman, 2011). Although these gender and developmental differences have been demonstrated within Western samples, it is not known whether such trends are universal across nations.

Emotion regulation across and within nations

An accumulating body of research has described developmental and environmental influences on children’s acquisition and use of emotion regulation skills in Western nations. Research investigating such phenomena in non-Western nations is increasing
and has demonstrated that children’s emotional development varies both across and within nations (e.g., Cole & Tamang, 1998; Raval, Martini, & Raval, 2007). Such findings illustrate the range of broad (e.g., national) and specific (e.g., ethnic, socioeconomic) environmental influences surrounding children’s experience and management of emotion (Lutz, 1988; Wang & Fivush, 2005). There is mounting evidence for universal developmental trends in emotion regulation abilities in some non Western nations (e.g., Cole, Bruschi, & Tamang, 2002); however, there is very limited emotion research with African children and adults. As an exception, one recent study examined emotion EC in Kenyan preschool age children living in a slum who were exposed to political violence (Kithakye, Morris, Terranova, & Myers, 2010). Competent emotion regulation, defined as effortful control, attention focusing, attention shifting, and inhibitory control, was assessed by the preschool teachers and found to be associated with less-aggressive behaviour and more prosocial behaviour post conflict.

Recent research has reported significant gender effects in the emotional experience of children from non Western nations outside Africa. A study of Turkish preschoolers revealed that girls were rated higher than boys by their teachers and mothers on a measure of emotion regulation and emotional lability (Yagmurlu & Altan, 2009). These data are consistent with Western literature that suggests the emergence of gender differences in emotional management as early as preschool age (e.g., Cole, 1986). Raval et al. (2007) investigated the regulation of anger, sadness, and pain in Gujarati children, aged 5–9, from two urban communities in India. Results demonstrated significant gender differences in emotion regulation behaviours. Specifically, girls reported more attempts to control their anger compared to boys and displayed sadness more frequently than anger, findings that parallel Western studies (e.g., Underwood et al., 1992; Zeman & Garber, 1996). The authors speculated that because the majority of the children were from the middle to upper classes of the Hindu caste system, adherence to social norms might have been a particularly salient influence on emotion regulation behaviours (Raval et al., 2007).

In sum, cross-national research is emerging that demonstrates some universality across development and gender concerning the expression and control of anger and sadness. What is absent from this emerging database is the inclusion of research examining these factors in African children. The goal of this study was to explore whether developmental and gender effects in emotion regulation across and within African nations would surface.

**Demographic structure of Ghana and Kenya**

In order to more fully appreciate the national comparisons being made in this research, a brief overview of the demographic structure of the African nations being studied is presented. Ghana, a nation in West Africa, has a population of approximately 25 million people (36.5% below the age of 14) and eight major ethnic groups. Originally colonized by the United Kingdom, Ghana was the first sub-Saharan African nation to gain its independence in 1957 and currently operates as a constitutional democracy. The average gross domestic product (GDP) per capita was estimated to be $1,560 in 2010 with an estimated 29% of the population below the poverty line in 2007.\(^1\) Ghana has been relatively free of political conflicts since 1981. With an average of 10 years of schooling

\(^{1}\)National estimates of the percentage of the population falling below the poverty line are based on surveys of sub-groups, with the results weighted by the number of people in each group. Definitions of poverty vary considerably among nations. For example, rich nations generally employ more generous standards of poverty than poor nations’ (CIA, 2011b, para. 142)
for most Ghanaians, the literacy rate is estimated to be 58% of the population over the age of 14 (Central Intelligence Agency [CIA], 2011a).

The Republic of Kenya is an East African nation that gained its independence from the United Kingdom in 1963 and has a population of approximately 41 million people (42% below the age of 14) with seven major ethnic groups. The average GDP per capita was approximately $1,600 in 2010 with an estimated 40% of the population below the poverty line in 2008. Kenya has had more violent political conflict than Ghana, with the most recent political conflict occurring after the 2007 elections and lasting for 3 months with approximately 1,500 deaths. The average number of years completed in school is 11 and the literacy rate is estimated to be 85% of the population over the age of 14 (CIA, 2011a).

In contrast to Ghana and Kenya, the U.S. population is approximately 313 million (20% below the age of 14), with the GDP per capita estimated to be $47,400 in 2010 (CIA, 2011a) and an estimated poverty rate of 14% in 2009 (U.S. Census Bureau, 2010). The average number of years completed in school is 16, and the literacy rate is estimated to be 99% of the population over the age of 14 (CIA, 2011a).

Children from both Ghana and Kenya were included in order to investigate nationality differences within the African continent, acknowledging that these nations each have unique languages, cultural practices, and customs. Overall, Kenya has a higher percentage of people living in poverty and has experienced more recent violent political conflict than Ghana. Ghana and Kenya do, however, share certain similarities including English as the official language and their British colonization history. Further, when compared to the U.S., both nations have relatively similar GDP and average years of education. Although there are 53 sovereign states in the continent of Africa, the inclusion of both Ghana and Kenya allows comparisons to be made between Western and non-Western cultures, two independent sub-Saharan nations, and reduces an overgeneralization that all African nations are comparable. Additionally, sampling from two locations within Ghana allows comparisons between rural and urban regions.

**Present study**

The overarching goal of the present research was to examine children’s report of their management of anger and sadness experience, and how this may vary as a function of environmental context (i.e., national, regional), age, gender, and type of emotion. To facilitate comparisons across groups, a well-validated measure (Children’s Emotion Management Scales [CEMS]; Zeman et al., 2001) was used to examine specific facets of emotion management. Given the lack of existing data on Ghanaian and Kenyan children’s emotion regulation, analyses regarding the nature and type of differences in children’s emotion management were considered exploratory. Generally, it was expected that children raised in environments characterized by more adversity and economic hardship (i.e., Ghana, Kenya) would display less emotional EC, more over control, and more under control than children growing up in more economically secure environments (i.e., U.S.) because these environments are more laden with stressors (e.g., hunger, poverty, violence) that might affect how children manage their emotions (Gilliom et al., 2002). Given that no research has compared emotion regulation strategies of children in Ghana and Kenya, within Africa national comparisons were exploratory. Certain similarities in development in children’s reported emotion regulation were anticipated across national contexts. Specifically, EC for anger was expected to be reported more frequently in the older than the younger age group, whereas the under control of sadness was expected
to decrease with age. Additionally, it was hypothesized that certain gender differences would not be influenced by nationality and economic status such that girls would report more over control of their anger and more under control of their sadness, whereas boys would report more EC of their sadness. Similar to the exploratory nature of the cross-national comparisons, the hypotheses for the within Ghana regional comparison was based on research suggesting that increased environmental stressors and poverty may affect children’s ability to be effortful when managing emotion (e.g., Gilliom et al., 2002). Specifically, it was expected that village children would report less EC, more over control, and more under control for anger and sadness when compared to urban children.

Method
Participants
Ghanaian rural village sample
A total of 103 children (54 boys; \(M\) age = 11.36 years, \(SD = 2.61\); range: 8–15 years) participated from the rural village, Kpando, which is in the Volta Region of Ghana (approximately 120 miles north of Accra, the capital of Ghana) and is predominately composed of members of the Ewe tribe. Kpando has a population of approximately 113,000 with 51% of the residents under the poverty line (Ministry of Local Government and Rural Development and Maks Publications & Media Services [MRDMPS], 2010). Ghanaian children spoke Ewe, a regional language, as well as English, the official government language. Although Ghana is in the process of providing free public education, the majority of schools are privately owned and have differing fee structures. All children in this sample attended a private school considered to be typical of those for working class, non-professional, and uneducated families who can afford to pay tuition to ensure a more stable, quality learning environment than the public schools. The student:teacher ratio was approximately 30:1. The cost for attending this school was 55.5 Ghanaian Cedis (approximately $39) per term plus textbooks and materials.

Ghanaian urban sample
Participants were 142 children (68 boys; \(M\) age = 11.07 years, \(SD = 1.88\); range: 8–15 years) who attended a private school in Adenta, a suburb of Accra, Ghana’s capital city. Accra has a population of approximately 438,000 people and is predominately comprised of members of the Ga and Akan ethnic groups (MRDMPS, 2010). Although specific information about Adenta’s poverty rates is not available, in comparison to urban areas, rural areas in Ghana have significantly more poverty (MRDMPS, 2010). Students spoke English and Ga or Twi, two regional languages. This private school was considerably more affluent in comparison to the village school (e.g., had electricity, indoor plumbing, two computer labs, a cafeteria, school bus). The student:teacher ratio was approximately 25:1 with tuition costs ranging from 275–315 Cedis ($192–$220) per term plus school uniforms and supplies.

Kenyan sample
Participants were 106 children (48 boys; \(M\) age = 11.14, \(SD = 1.74\), range: 8–15 years) recruited from two schools in the Mathare slums of Nairobi. Mathare is known for its extreme poverty and brutal gang violence with only 5% of its population legally employed (Mathare Roots, 2010). There are approximately 500,000 people living within
a few square miles resulting in high rates of crime, substance abuse, and individuals living with HIV/AIDS (Mathare Roots, 2010). This geographic area was centrally involved in the post-presidential election violence of January 2008. Both schools, located approximately five miles apart, were operated by the same non-profit organization and administrative staff and had about a 1:30 teacher:student ratio. Children spoke English, the official government language of Kenya, and were also fluent in Swahili. Children did not pay tuition to attend this school but were required to buy uniforms. Although the school had running water, indoor plumbing, and limited electricity, it was typical for 5–8 children to share a textbook.

American sample
Participants included 170 children (95 boys; 41.2% African American, 58.8% Caucasian; \( M_{\text{age}} = 11.07, SD = 1.82 \), range: 8–15 years) who were recruited from two public elementary and two middle schools in Virginia and Georgia. The schools were located in small urban areas that reflected lower to middle class SES. For brevity, children from the United States will be referred to as ‘American.’

Measures
The CEMS (Zeman et al., 2001) were used to measure regulation of anger (CAMS) and sadness (CSMS). Previous studies have identified three factors including Regulation Coping, Inhibition, and Dysregulation (Zeman et al., 2001). However, given the different cultural contexts being assessed in this study, these scales were re-labelled to reflect more neutral descriptors. Factor analyses were conducted to determine whether the original factor structure was retained with this new sample (see Preliminary Analyses below). The final scales used for analyses were based on the 11-item CAMS and 12-item CSMS that use a 3-point Likert scale (1 = hardly ever, 2 = sometimes, 3 = often) to assess specific emotion regulation behaviours through three domains. The first factor was labelled EC and assessed deliberate attempts to manage emotional arousal and expressivity (e.g., ‘I stay calm and don’t let sad things get to me’, ‘I try to calmly deal with what is making me mad’). Using American child samples, EC has been considered an adaptive way to control emotions that is neither too controlled (e.g., suppression) nor lacks control (e.g., dysregulation). The second factor, over control, assessed inhibition or suppression of emotions (e.g., ‘I hide my sadness’, ‘I hold my anger in’). On the opposite end of the emotional control spectrum, the third factor assessed overt emotional displays termed under control and may reflect a lack of regulatory efforts (e.g., ‘I cry and carry on when I’m sad’, ‘I say mean things to others when I am mad’). Modifications were employed to minimize cultural misinterpretations of specific words (e.g., ‘insulting’ as a synonym for ‘saying mean things’). Black and white drawings of faces were used to depict anger and sadness. Additionally, a visual representation (e.g., circles of differing sizes) of the frequency scale was used to depict the differing magnitudes of each choice. Under each circle was the corresponding verbal option and its numerical value.

Procedure
Ghana and Kenya were chosen for study because they are both English-speaking nations, and both in sub-Saharan Africa. The research team had contacts in both nations making data collection in the schools and access to a translator more easily arranged. In each setting, informed consent by school administrators, parents, and/or guardians
was obtained as well as child verbal assent. Caucasian-American female adults read questionnaires aloud to the children in English. Ghanaian and Kenyan children spoke English, but given the variation in fluency, a local translator assisted the interviewer by providing clarification if needed. For younger children and all African children, questionnaires were administered individually or in small groups of two to three children. For older American children, questionnaires were administered in a group setting with five to seven children participating. American and African children received a small gift (e.g., pencil, eraser, stickers) and participating African schools were provided with educational materials (e.g., books, paper).

Results

Preliminary Analyses
In order to determine whether the factor structure of the CEMS scales remained invariant across the cultures assessed in this study, factor analyses were conducted using the data from the African sample. Factors were retained if they had eigenvalues above 1.0 and factor loadings above .40 in order to achieve improved accuracy (Stevens, 1996).

Anger
Principal components analysis (PCA) with varimax rotation extracted three factors that accounted for 47.28% of the variance. The eigenvalue for the first factor was 2.34; the second factor, 1.33; the third factor, 1.06. One item for EC (‘I stay calm and keep my cool when I am feeling angry’) did not load on any factor and was excluded from subsequent analyses. The first factor consisted of the original four over control items and accounted for 23.36% of the variance. The second factor consisted of the original three under control items and accounted for 13.34% of the variance. The third factor consisted of three EC items and accounted for 10.58% of the variance.

Sadness
PCA with varimax rotation extracted four factors that accounted for 52.60% of the variance. The eigenvalue of the first factor was 2.10; the second factor, 1.45; the third factor, 1.56; and the fourth factor, 1.08. One EC item (‘I try to calmly deal with what is making me sad’) did not load on any factor and was dropped from analyses. The first factor consisted of the original four over control items and accounted for 19.10% of the variance. The second factor consisted of the three original under control items and accounted for 13.17% of the variance. The third factor consisted of two EC items that corresponded to exerting control over expressions of sadness and accounted for 10.50% of the variance. It was named ‘EC: Constraint’. The fourth factor consisted of two EC items that corresponded to remaining calm while feeling sad and accounted for 9.82% of the variance. This factor was named ‘EC: Calmness’. If a three-factor solution was forced, the items for the Control subscale no longer loaded on any factor. Across all subscales, internal consistencies ranged from .43 to .66 based on two-, three-, or four-item scales. In the following analyses, this revised scale structure was used with both the African and American samples.

Analytic strategy
In order to examine developmental effects, children were placed into younger (ages 8–11) or older (ages 12–15) age groups that reflected elementary versus middle
school educational groupings in both Africa and the United States. See Table 1 for age by gender breakdowns. Then, two sets of analyses were conducted. The first set examined differences as a function of residing in an urban context by nationality (i.e., Ghana, Kenya, U.S.) and the second set of analyses examined differences within Ghana as a function of living in an urban versus a village setting. All data were analysed using MANOVA with Nation or Place, Age Group, and Gender designated as the independent variables and the scores on the Anger and Sadness CEMS subscales as the dependent variables. Significant effects were further analysed using one-way ANOVA with Tukey’s HSD post hoc comparisons.

### Nationality comparisons

#### Regulation of anger

Nationality differences were examined by comparing children from the three urban contexts of Ghana, Kenya, and the U.S. MANOVA revealed a significant main effect of Nation, Wilks’ $\lambda = .86$, $F(6, 782) = 10.13, p = .001, \eta^2_p = .07$. Tests of between-subject effects revealed differences on the over control subscale, $F(2, 393) = 15.83, p = .001, \eta^2_p = .08$, and the under control subscale, $F(2, 393) = 7.37, p = .001, \eta^2_p = .04$. Post hoc analyses revealed that Kenyan children ($M = 2.17, SD = .52$) reported inhibiting their displays of anger more frequently than the Ghanaian ($M = 1.89, SD = .48$) and American children ($M = 1.80, SD = .53$), who did not differ from each other, $F(2, 410) = 17.78, p = .001$. Regarding the under control scale, Ghanaian children ($M = 1.95, SD = .52$) reported expressing their anger in overt ways more frequently than the Kenyan ($M = 1.79, SD = .56$) and American children ($M = 1.71, SD = .51$), who did not differ from each other, $F(2, 407) = 7.76, p = .001$.

MANOVA also revealed a significant Gender main effect, Wilks’ $\lambda = .98$, $F(3, 391) = 2.81, p = .04, \eta^2_p = .02$. Tests of between-subject effects revealed significant differences on the over control subscale, $F(1, 393) = 5.84, p = .02, \eta^2_p = .02$. Girls reported ($M = 1.99, SD = .52$) inhibiting or suppressing overt expressions of anger more than boys ($M = 1.86, SD = .53$), $t(411) = -2.32, p = .02$.

#### Regulation of sadness

MANOVA revealed a significant main effect of Nation, Wilks’ $\lambda = .86$, $F(8, 784) = 7.58, p = .001, \eta^2_p = .07$, that indicated differences for the under control subscale,
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Within Ghana comparisons

Regulation of anger
Children’s data from the village school were compared to the children attending school in Accra-Adenta to evaluate within-nation differences. MANOVA revealed a significant main effect of Place, Wilks’ λ = .97, F(3, 234) = 2.81, p = .04, $\eta^2_p = .04$, in which tests of between-subject effects revealed differences for the over control subscale, $F(1, 236) = 8.06, p = .005, \eta^2_p = .03$. Village children reported inhibiting their anger more frequently ($M = 2.07, SD = .47$) than children from Accra-Adenta ($M = 1.89, SD = .48$), $t(242) = 2.92, p = .004$.

Regulation of sadness
MANOVA revealed a significant main effect of Age Group, Wilks’ λ = .96, F(4, 233) = 2.63, $p = .04, \eta^2_p = .04$. Tests of between-subject effects revealed a significant difference on the EC: Calmness subscale, $F(1, 236) = 6.97, p = .01, \eta^2_p = .03$, and a marginally significant difference on the EC: Constraint subscale, $F(1, 236) = 2.85, p = .09$, $p = .001$. Similarly, boys reported controlling or constraining their sadness displays more frequently ($M = 1.69, SD = .55$, $F(2, 410) = 10.08, p = .001$. Further, Kenyan children reported remaining calm when feeling sad more frequently ($M = 2.32, SD = .61$) than Ghanaian ($M = 2.06, SD = .55$), and American children ($M = 2.08, SD = .60$) who did not differ significantly from each other, $F(2, 412) = 7.31, p = .001$. Concerning the Constraint subscale, American children reported exerting more constraint over their sadness expression ($M = 2.31, SD = .51$) than Ghanaian ($M = 2.01, SD = .49$) and Kenyan children ($M = 1.99, SD = .55$) who did not differ significantly from each other, $F(2, 411) = 15.71, p = .001$.

MANOVA also yielded a significant main effect of Gender, Wilks’ λ = .94, F(4, 392) = 6.07, $p = .001, \eta^2_p = .06$, with between-subject effects for the under control subscale, $F(1, 365) = 10.04, p = .002, \eta^2_p = .03$, and the EC: Constraint subscale, $F(1, 365) = 6.16, p = .01, \eta^2_p = .02$. Regarding under control, girls ($M = 1.93, SD = .52$) reported expressing their sadness in overt ways more frequently than boys ($M = 1.72, SD = .52$), $t(411) = 4.23, p = .001$. Similarly, boys reported controlling or constraining their sadness displays more frequently ($M = 2.21, SD = .57$) than girls ($M = 2.03, SD = .54$), $t(412) = 3.27, p = .001$.

Certain main effects were qualified by a significant Nation by Gender interaction, Wilks’ λ = .95, F(8, 784) = 2.67, $p = .01, \eta^2_p = .03$ with between-subjects differences on the under control subscale, $F(1, 365) = 8.20, p = .004$, and the over control subscale, $F(1, 365) = 8.20, p = .004$. These interactions were best explicated by examining Nationality differences within Gender. Regarding under control, Ghanaian ($M = 1.93, SD = .49$) and Kenyan ($M = 1.76, SD = .51$) boys reported expressing their sadness in overt ways more than American boys ($M = 1.54, SD = .49$), $F(2, 206) = 12.98, p = .001$. There were no significant differences for girls. Regarding the over control subscale, there were no significant differences among boys but a marginally significant finding emerged for girls, $F(2, 200) = 2.92, p = .057$. Kenyan girls reported inhibiting their sadness more frequently ($M = 2.19, SD = .52$) than Ghanaian ($M = 2.00, SD = .51$) and American girls ($M = 1.99, SD = .50$), who did not differ from each other.
\[ \eta_p^2 = .01. \] Older children reported staying calm more frequently when feeling sad (\( M = 2.20, SD = .55 \)) than the younger children (\( M = 2.01, SD = .55 \)), \( t(242) = -2.65, p = .01 \), and also reported exhibiting more sadness expression constraint than the younger children (older: \( M = 2.08, SD = .48 \); younger: \( M = 1.96, SD = .48 \)), \( t(242) = -1.73, p = .08 \).

**Discussion**

Given the dearth of cross-national research examining emotional processes in children, particularly in African nations, this research sought to provide a descriptive overview of national, regional, developmental, and gender differences in children’s self-reported management of anger and sadness. Examination of the findings revealed five general themes.

First, it appears that Ghanaian children report being more emotionally expressive than Kenyan and American children. Specifically, Ghanaian children reported displaying their anger in more overt, under controlled ways than Kenyan and American children. Conversely, Kenyan children reported suppressing their anger more than Ghanaian and American children. Based on these preliminary findings, it appears that Ghanaian youth may be more expressive with wider fluctuations in their emotionality than children from the U.S. and Kenya.

Second, American children tended to report exerting more control over sadness compared to both groups of African children. Specifically, American children reported constraining their displays of sadness more than African children, although the Kenyan children reported responding calmly to their sadness more than Ghanaian and American children. Further, the differences in the under control of sadness between continents was particularly noticeable for boys such that Ghanaian and Kenyan boys reported displaying their sadness in under controlled ways more frequently than American boys. Perhaps American boys experience more pressure to dampen their displays of sadness than the African boys, consistent with research indicating that American boys believe they will not receive support for expression of vulnerable emotions to their peers or parents (Zeman & Garber, 1996). Further, Kenyan girls reported more over control of their sadness than Ghanaian and American girls, although this finding represented a trend and should be interpreted with caution.

Taken together, these findings may reflect a national cultural difference in the acceptability of emotional displays or perhaps even a broader cultural emotional climate (Becht & Vingerhoets, 2002). These findings dovetail the researchers’ observations that emotional expressions, particularly anger and happiness, were more frequently and passionately displayed in Ghana than in Kenya (e.g., it was more common to see people arguing in the streets loudly in Ghana compared to Kenya, though the researchers are aware of the biases in unsystematic observation). It may be that blatant displays of negative emotion in Kenya are sanctioned only in certain circumstances (i.e., outrage over political events), but are not tolerated or accepted in day-to-day life where emotional control may be more adaptive and protective.

Third, consistent with our hypotheses, regional comparisons within Ghana indicated that children from the village reported more over control of anger than children in the urban region. Future research should investigate whether this difference could be related, in part, to the environmental adversity (as indicated by poverty rates and lack of resources) experienced by the village children. Western literature suggests that poverty and adversity affect youths’ development, including emotional development
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(e.g., Buckner et al., 1999; Kusserow, 1999; Miller, 1986). These discrepancies also may arise from socialization experiences, in which emotional expressivity is shaped by the expectations and responses of others to anger expression. Based on observation, albeit not standardized and likely biased, the majority of children living in the village with their families often received harsh repercussions (e.g., beatings) for their overt emotional displays (e.g., yelling, crying) by family members, whereas these types of responses were not observed in the suburban context. Although speculative, it is possible that the village children have learned to control their expressions of anger in response to the expectation that they will receive a punitive response to emotional displays. As this research is exploratory in nature, future research needs to be conducted to fully understand the nature of and outcomes associated with emotion socialization processes in this context.

Fourth, as anticipated, robust gender differences emerged across nations such that girls reported more over control of anger whereas boys reported more control over sadness expression than girls suggesting that gender differences in emotion regulation may be more universal than nation specific. This finding is commensurate with research in both Western and non-Western nations suggesting that compared to boys, girls tend to display anger less frequently and sadness more frequently (e.g., Fischer & Manstead, 2000; Raval et al., 2007; Underwood et al., 1992). Future research should investigate the socialization processes that operate in all three nations to understand whether the same mechanisms are operating to produce this consistent set of findings.

Fifth, consistent with our general hypothesis that some commonalities across nations would emerge, one developmental differences was found. Specifically, in Ghana, regardless of living environment (rural vs. urban), older children reported controlling their sadness more than younger children. Specifically, older youth reported remaining calm and in control of their sad feelings more frequently than younger children. This finding is consistent with past research using samples from both Western (e.g., Zeman et al., 2001) and non-Western nations (e.g., Cole et al., 2002). It is puzzling that these findings did not hold for the samples from Kenya and the U.S. Analyses of the age group means by country (including all participants) for sadness control revealed that the Ghanaian younger age group sample had the lowest mean scores compared to the other two nations, suggesting that perhaps younger Ghanaian children are more expressive of sadness in general than the other nations.

In sum, the results of this research represent a preliminary investigation into environmental influences on emotion management through cross-nation and within-nation comparisons. To our knowledge, this is a first attempt to conduct such research with a population that has virtually been ignored in developmental literature, namely, children in sub-Saharan Africa. Although the findings from this study make an initial contribution to our understanding of differences and similarities in children’s emotion regulation across and within two African nations, there are several limitations of note. First, although limited demographic information was obtained, the infrastructure in both Ghana and Kenya did not allow for precise measurement of SES. Thus, estimates of population size and teacher to student ratios are provided, but future research should attempt to find innovative ways to obtain more precise demographic markers. Second, the data relied solely on self-report using measures normed on Western samples. It will be important for future studies to incorporate multiple reporters (e.g., parents, teachers) and multiple methods (e.g., observational, ethnographic) of assessment given research documenting that such methodological changes can yield differing findings (Zeman et al., 2006). For instance, research has documented that boys and girls may differ on emotional
constructs depending on whether self-report or observational methods are used (Shields, 1991). One of the advantages of the emotion regulation measure used in this study is that the items are not placed within a specific social context but rather are asked in a general manner (i.e., ‘I hide my sadness’). Despite this advantage, there were several limitations of the measure. The questionnaires used in the present study did not assess motivation for emotion regulation (e.g., why children reported managing emotions in a particular manner) or socialization norms (e.g., how they learned to manage their emotions in a particular way) or whether certain emotion regulation methods were associated with particular outcomes (e.g., what modes of emotion regulation were adaptive). Thus, the next studies should build on the current research by assessing such factors that are known to influence children’s emotional development (Eisenberg, Cumberland, & Spinrad, 1998). Third, female American interviewers interviewed children; thus, social desirability may have affected their responses. Lastly, in African cross-cultural research, there is a call to involve more local researchers in order to promote collaboration and disciplinary development (Marfo, 2011). Thus, future research should seek to incorporate researchers native to the area being studied. These preliminary findings can help guide future research to develop additional questions and tasks that can address facets of emotion management specific to African nations. Relatedly, empirical efforts should include measures of socialization in order to more comprehensively assess the mechanisms through which emotion regulation is socialized in children of different cultural contexts. Future research should also attempt to better understand whether different aspects of emotion management (e.g., under control, over control) are related to maladaptive outcomes, as has been shown to be the case in Western samples (e.g., Zeman et al., 2006). Overall, this study offers a preliminary investigation regarding the role of nationality, developmental factors, and gender on children’s regulation of their anger and sadness. This study adds to the existing research on developing nations and highlights the great need for further cross-national research to build on and extend the findings from this study.

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