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PARENT REPORTS OF THE PREVALENCE OF ADVERSE CHILDHOOD EXPERIENCES AMONG CHILDREN AND TEENS IN THE CAPE COAST METROPOLIS, GHANA

James Afriyie, Kelly Bolton and Debra Nelson-Gardell

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Article abstract

Adverse childhood experiences (ACEs) — potentially traumatizing events that occur in childhood — have been linked to serious health problems later in life. Despite the documented negative effects of ACEs, and the high prevalence of ACEs in lower-middle-income countries, research about ACE prevalence is sparse for locales in Sub-Saharan Africa. This descriptive study examined the prevalence of ACEs among 800 children and teens in the Cape Coast Metropolis, Ghana, as reported by their parents (or caregivers), who were recruited from February to April 2021. Parent-reported sociodemographic characteristics and ACEs experienced by the children and teens were collected with the Center for Youth Wellness ACE Questionnaire (CYW ACE-Q). Analysis of the parents' reports indicated that about 84.9% of the children and teens had been exposed to at least one ACE, 69.1% had experienced two or more ACEs, and 51.8% had experienced three or more ACEs. The most prevalent ACEs, according to the parents, were community violence (50.2%), separated parents (34.0%), physical abuse (33.4%), and emotional abuse (28.9%). This study thus reveals a high prevalence of ACEs in the Cape Coast Metropolis of Ghana, suggesting the need for policies and actions aimed at reducing community violence and protecting children from abuse in the Metropolis.

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Abstract: Adverse childhood experiences (ACEs) — potentially traumatizing events that occur in childhood — have been linked to serious health problems later in life. Despite the documented negative effects of ACEs, and the high prevalence of ACEs in lower-middle-income countries, research about ACE prevalence is sparse for locales in Sub-Saharan Africa. This descriptive study examined the prevalence of ACEs among 800 children and teens in the Cape Coast Metropolis, Ghana, as reported by their parents (or caregivers), who were recruited from February to April 2021. Parent-reported sociodemographic characteristics and ACEs experienced by the children and teens were collected with the Center for Youth Wellness ACE Questionnaire (CYW ACE-Q). Analysis of the parents' reports indicated that about 84.9% of the children and teens had been exposed to at least one ACE, 69.1% had experienced two or more ACEs, and 51.8% had experienced three or more ACEs. The most prevalent ACEs, according to the parents, were community violence (50.2%), separated parents (34.0%), physical abuse (33.4%), and emotional abuse (28.9%). This study thus reveals a high prevalence of ACEs in the Cape Coast Metropolis of Ghana, suggesting the need for policies and actions aimed at reducing community violence and protecting children from abuse in the Metropolis.

Keywords: adverse childhood experiences, prevalence, children, teens, Cape Coast, Ghana

James Afriyie MSc is a Lecturer at the Department of Biomedical Sciences, School of Allied Health Sciences, University of Cape Coast, P.M.B. Cape Coast, Ghana.
Email: jafriyie@ucc.edu.gh

Kelly Bolton PhD (corresponding author) is an Assistant Professor in the Department of Social Work at the University of North Alabama, 500 Stevens Hall, Florence, AL 35632.
Email: kebolton@crimson.ua.edu

Debra Nelson-Gardell PhD was (retired) an Associate Professor in the School of Social Work at the University of Alabama, Tuscaloosa. Email: dnelsong@retiree.ua.edu

Emotionally traumatic experiences in childhood can have significant negative long-term effects on behavior and health (Felitti et al., 1998). According to the Centers for Disease Control and Prevention (2019) in the United States, these kinds of adverse childhood experiences (ACEs) are linked to poor socialization and health problems later in life. These include risky health behaviors such as alcoholism; verbal and physical aggression (Mumford et al., 2019); smoking and lack of physical exercise; and chronic health conditions, including diabetes, heart disease and stroke, and early death (Almuneef et al., 2016; Felitti et al., 1998; Kappel et al., 2021; Kidman et al., 2020, Ramiro et al., 2010). For example, in Chigiji et al.'s 2018 study in Zimbabwe, which involved 2,410 respondents aged 13 to 24, physical and emotional abuse were shown to contribute to deleterious mental and physical health outcomes. For children in Zambia, cumulative ACE exposure has been shown to contribute significantly to suicide risk (Lee et al., 2022). These examples support the concern that ACEs, including child abuse and neglect, constitute a major global public health challenge.

The original ACE study (Felitti et al., 1998) established a strong significant relationship between exposure to adverse experiences, such as household dysfunction and emotional, physical, and sexual abuse before the age of 18, and health risk behaviors and diseases in adulthood — factors that are known to contribute to some of the leading causes of death. The original ACE study questionnaire assessed several different categories of these adverse experiences, with every item on the questionnaire representing one ACE, and higher cumulative ACE scores being associated with higher risk of disease later in life. Thus, administering the ACE questionnaire to children and adolescents (via self-reports or caregivers' reports) can roughly predict their level of risk for developing these negative physical and mental health consequences, as well as for engaging in and perpetrating violence (Blum et al., 2019).

Prevalence of ACEs Globally

Global estimates of ACE prevalence suggest that ACEs are common, with approximately one fourth of all adults having experienced at least one ACE (Bellis et al., 2019; World Health Organization [WHO], 2016). In North America and in Europe, it is estimated that 23% of adults have experienced at least one ACE (Bellis et al., 2019); one U.S. study based on ACE questionnaire data found that 61% of adults had experienced at least one ACE and 16% had experienced four or more different types of ACE (Merrick et al., 2019). Surveys on ACEs collected across the WHO European region revealed that almost half of young adults experienced one ACE before the age of 18 (Bellis et al., 2014; Hughes et al., 2021). One estimate suggested that globally, 50% of children aged 2 to17 have undergone some form of physical, sexual, or emotional violence in the past year (Hillis et al., 2016), and another estimate suggested that nearly three in four children between the ages of 2 and 4 have suffered physical and emotional violence by their caregivers (WHO, 2016).

Globally, and independent of national income, the most common ACEs are parental death and physical abuse (Kessler et al., 2010; Massetti et al., 2019), although prevalence rates for every

ACE type vary considerably by region and country. However, it has been found that emotional maltreatment, physical neglect, and parental separation, divorce, and death tend to be higher in some low-income or lower-middle-income countries compared with high-income countries (Charak et al., 2017; Kidman et al., 2020; Soares et al., 2016). Women and girls in South Africa with reported histories of sexual violence tend to suffer delays in school functioning and disruptions in their learning processes (Phasha, 2014), which places them at risk for low educational attainment. Women are also more likely than men to have experienced four or more ACEs (Felitti et al., 1998; Merrick et al., 2019) and are more likely than men to report higher rates of interpersonal violence (Kappel et al., 2021).

Studies on the prevalence of ACEs, particularly in low-income and lower-middle-income countries, have revealed a potentially higher prevalence of ACEs in these regions and a greater number of factors, such as higher poverty and lower literacy rates, that place children at higher risk for ACEs (Charak et al., 2017, 2021). In Honduras, for example, a cross-sectional study found that 77% of adults had experienced at least one ACE (Kappel et al., 2021); in Malawi, over 99% of adolescents aged 10 to 16 reported having experienced at least one ACE (Kidman et al., 2020). In both studies, the most commonly reported adversities were witnessing community violence and separation from one or both parents due to migration or some other cause.

Meinck et al.'s (2015) review of studies done in African countries found that rates of children suffering physical abuse were as high as 64%. In Burundi and Kenya, some of the most common ACEs are physical and emotional neglect, food insecurity, and parental unemployment (Charak et al., 2017; Kabiru et al., 2014). In these countries, prevalence rates of these forms of ACEs are significantly higher than those of a variety of ACEs measured in the United States (Felitti et al., 1998) and in many other Western community samples (Meinck et al., 2015). Also, female adolescents in these African studies tended to report a higher number of ACEs than males did (Charak et al., 2017; Kabiru et al., 2014; Meinck et al., 2015).

ACEs in Ghana

Despite the known global ACE prevalence rates and the known deleterious health and mental health consequences of ACEs throughout the lifespan, data on child abuse rates and ACEs are limited in most low-income and lower-middle-income countries, including African countries such as Ghana (Badoe, 2017; Kidman et al., 2020). Although these regions have fewer resources to maintain surveillance and data on child maltreatment and other ACEs (Bellis et al., 2019), emerging evidence suggests that there are overall higher rates of ACEs among adolescents in resource-poor contexts (Blum et al., 2019) and that ACEs are more widespread in these parts of the world (Soares et al., 2016). The higher rates of ACEs in low-income and lower-middle-income countries can be attributed to the more limited resources and fewer social protections in these regions compared to more developed countries (Ramiro et al., 2010), as well as to higher poverty rates, parental economic hardships, and a lack of mental health policies and supports in these areas (Rahapsari et al., 2021).

Statistics from a national child protection baseline study conducted by the Government of Ghana and the United Nations Children's Fund (2014) revealed that children and adolescents in Ghana experienced serious forms of violence and abuse across the country. In Ghana in 2013, up to 33% of children ages 0 to 5 and 53% of children ages 6 to 14 had experienced regular physical harm by adults or caregivers in their lives, and one third of children had been exposed to verbal or emotional abuse. Nearly 6% of survey responses indicated incidences of past-month child sexual abuse and exploitation (United Nations Children's Fund, 2014). These report results also suggested that 87% of children who experienced emotional violence, abuse, and neglect also experienced persistent disturbances in their mood, suggesting that they may be suffering deleterious mental health consequences because of these ACEs (United Nations Children's Fund, 2014).

However, in Ghana, and in the Cape Coast Metropolis specifically, no studies have yet investigated the overall prevalence of ACEs and their long-lasting negative impacts on physical and mental health. Some work has been done in the area. For instance, a study in the Cape Coast Metropolis investigated children's perceptions of and attitudes towards of one type of ACE, child sexual abuse (Sika-Bright & Nnorom, 2013), but much remains to be done: information on the overall prevalence of ACEs in the metropolis is not yet available. The importance of this work is highlighted by a Zimbabwean study of ACEs that found strong associations between physical and emotional abuse and serious negative mental and physical health outcomes (Chigiji et al., 2018). For children in other parts of Africa, cumulative ACE exposure has been shown to contribute to significant suicide risk and suicidal behaviors (Cluver et al., 2015; Lee et al., 2022).

Thus, it is hypothesized that the prevalence of ACEs among children and teens in Ghana is high. This is the first known study to describe the prevalence of ACEs among any population of youth in Ghana. In this paper, expanding on prior works, we address the gap in research on the prevalence of ACEs among children and adolescents in Ghana and we contribute to an understanding of the need for interventions to mitigate the severe effects that ACEs can have on those who experience them.

Method

Sampling Procedure

Stratified and probability sampling procedures were used for the current study. Investigators recruited 800 parents and caregivers of children and teens from nine rural communities and four urban communities randomly selected in the Cape Coast Metropolis from February to April 2021. Further random sampling procedures were used in each community to select the houses approached for participation in the study. In each house, one child or one adolescent, with their parents or caregivers, was approached and asked to participate. Parents and caregivers who gave their consent to participate and whose older children and teens gave their assent for the parents to report data about them were included in the dataset. After explanation of the study, a few of the teens withheld assent and their data were not included.

Potential participants who were excluded from data collection were children, teens, or caregivers who were seriously ill and those who had been residing in the community for less than one year. If more than one parent or caregiver in a household met the inclusion criteria, the toss of a coin was used to select the one to participate in the study.

The final sample included 355 parents and caregivers of teens (13–19 years) and parents and caregivers of 455 children (0–12 years). The sample size of 800 parents and caregivers exceeds the required minimum sample size of 600, which was calculated by using a sample size formula (Godden, 2004) and estimating a 95% confidence level and a 4% margin of error, as there are no known prior studies in Ghana on the prevalence of ACEs.

Measures and Instrumentation

Data were collected on sociodemographic characteristics of the children and teens: sex (male or female), age in years, education (highest education attainment), community type (rural or urban), school type (public or private), housing type, and religion.

To collect data on ACEs in the sample of children and teens, adapted versions of the CYW ACE-Q (Bucci et al., 2015) were used (see Table 1). In conformance with the standard use of the CYW ACE-Q, this study used three versions of the questionnaire: a 17-item version for children from 0 to 12, completed by their parents/caregivers; a 19-item version for adolescents (teens) from 13 to 19, completed by parents/caregivers; and a 19-item self-report version for teens from 13 to 19, completed by the teens themselves. The data collected with the two CYW ACE-Qs that were completed by the parents/caregivers (in interviews separate from those with the children and teens) were used for the analyses presented in this paper. In a future report, data collected from teens using the self-report version of the CYW ACE-Q for teens will be compared with the data collected from parents/caregivers regarding the teens.

The questionnaires included “yes” and “no” responses for each of the question items. Children and teens were considered to have been exposed to an ACE type if their parents or caregivers responded “yes” to the answer for that type, indicating that their child had been exposed to that ACE at any point in their lives.

The 19 ACEs measured for the teens included all 17 of the ACEs measured in the child version of the questionnaire, and two additional ACEs: history of being incarcerated as children or teens, and experience of romantic partner abuse. For the purposes of this study, and upon adapting the measure to this study’s context, we also introduced “if any” to the questionnaire item about romantic partnership abuse, since teen and adolescent romantic partnerships are not generally acceptable in Ghanaian culture and society. In the question about discrimination, the variable “tribe” was added as tribalism can be an issue in Ghana. Respondent ACE scores were computed by summing the number of ACEs to which respondents had been exposed.

Data Collection

Eleven final-year students and teaching assistants were recruited from the Department of Biomedical Sciences, University of Cape Coast. After training, these individuals administered the CYW ACE-Qs (Bucci et al., 2015) in English. Data collectors assisted with translating some of the questionnaire items into Fante or Twi for participants who requested explanations in those dialects. Data were collected from parents/caregivers about younger children, as well as older children and teens (see Table 1). Because we wanted to compare the results for younger children with the results for older children and teens, and did not collect data directly from younger children, we used the data provided by caregivers for both groups, to ensure consistency of reporting.

Table 1. *Adapted CYW ACE-Q Measure Items*

ACE	Question
Questions regarding both children (0–12) and teens (13–19)	
Separated parent	Your child's parents or guardians were separated or divorced
Incarcerated household member	Your child lived with a household member who served time in jail or prison
Mentally ill household member	Your child lived with a household member who was depressed or mentally ill, or who attempted suicide
Domestic violence	Your child saw or heard household members hurt or threaten to hurt each other
Emotional abuse	A household member swore at, insulted, humiliated, or put down your child in a way that scared your child OR a household member acted in a way that made your child afraid that s/he might be physically hurt
Physical neglect	More than once, your child went without food, clothing, a place to live, or had no one to protect her/him
Physical abuse	Someone pushed, grabbed, slapped, or threw something at your child OR your child was hit so hard that your child was injured or had marks
Drug or alcohol use by a household member	Your child lived with someone who had a problem with drinking or using drugs
Emotional neglect	Your child often felt unsupported, unloved, and/or unprotected
Lived in foster home	Your child was in foster care
Bullying	Your child experienced harassment or bullying at school
Parental death	Your child lived with a parent or guardian who died
Immigration separation	Your child was separated from her/his primary caregiver through deportation or immigration or any other reason
Serious illness of child	Your child had a serious medical procedure or life-threatening illness
Community violence	Your child often saw or heard violence in the neighborhood or in her/his school neighborhood
Incarcerated child	Your child was detained, arrested, or incarcerated
Bad treatment based on discrimination	Your child was often treated badly because of race, tribe, sexual orientation, place of birth, disability, or religion
Questions regarding teens (13–19) only	
Romantic partner abuse	Your child experienced verbal or physical abuse or threats from a romantic partner (i.e. boyfriend or girlfriend if any)
Sexual abuse	Someone touched your child's private parts or asked your child to touch their private parts in a sexual way

Data Analysis

The analysis for this paper focuses solely on children and teen sociodemographic characteristics, including sex, developmental stage, and ACE scores. The data were analyzed using the Statistical Package for Social Sciences (SPSS version 25.0). Descriptive statistics were performed for discrete and continuous variables to obtain their frequencies and percentages, including the prevalence of ACEs, and which types were common. Differences in proportions were examined using the chi-squared test; differences between proportions were considered significant if p was less than .05.

Ethics

Ethical clearance for the conduct of the study was given by the University of Cape Coast Ethical Review Board (IRB0 UCCIRB/EXT/2020/06). Data collection, cleaning, and initial analyses were undertaken by the first author of this manuscript, who obtained institutional review board (IRB) clearance. Data were de-identified prior to involvement of the second and third authors, whose home institution accepted the IRB clearance obtained by the first author as adequate for the protection of human research participants in a study of this type. The information in the Informed Consent Form in the IRB-approved proposal was read and explained to the parents/caregivers and older children. Consent for participation was then sought from the participants through signing or thumb-printing of the consent form by parents/caregivers. Assent forms were also signed or thumb-printed by older children and teens (ages 13–19), assenting to the provision of data about themselves by their parents/caregivers. In order that teens could answer the self-report questionnaire by themselves, they also signed or thumb-printed the informed consent form for a child or minor in the presence of witnesses. The teens' self-reported data and the data on teens reported by parents/caregivers will be compared in a future report. Parents/caregivers, teens, and older children were fully informed of their freedom to participate or not. The research was conducted with all due respect for human subjects participating in research studies, including having a plan and arrangement in place to help mitigate any psychological discomfort that was observed; however, no such discomfort was observed during the study.

Results

Table 2 gives the sociodemographic characteristics of all study participants. The majority of the 800 young people recruited in the study (445, 55.6%), were children (0–12 years) and 355 (44.4%) were teens (13–19 years). A total of 466 of the participants (58.2%) were female and the rest were male. The majority of participants lived with their biological parents (80.9%), lived in compound houses[1] (66.6%), and resided in urban communities (60.6%). Most attended public school (71.1%) and belonged to the Christian religion (91.8%).

[1] A compound is a single house with a number of bedrooms that open to a central open space that occupants use for activities such as eating, washing clothes, playing, and meetings. Residents may also share a kitchen and bathrooms.

Table 2. *Participant Demographics*

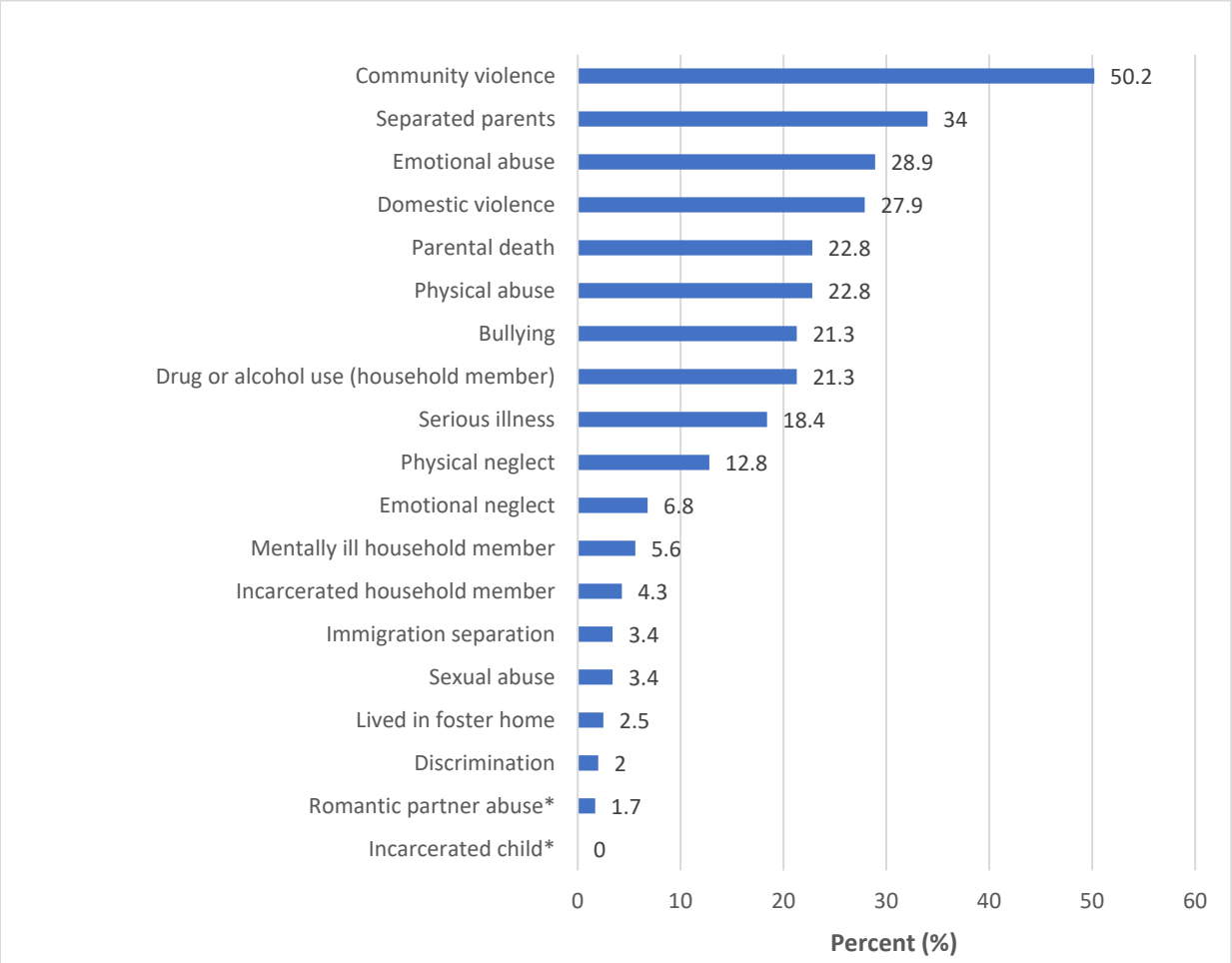
Characteristic	*n*	%
Sex		
Female	466	58.2
Male	334	41.8
Developmental stage		
Children (0–12 years)	445	55.6
Teens (13–19 years)	355	44.4
Age (years)		
0–4	145	18.1
5–9	187	23.4
10–14	257	32.1
15–19	211	26.4
Community type		
Rural	315	39.4
Urban	485	60.6
Education		
No school	68	8.5
Nursery/Kindergarten	133	16.7
Primary	285	35.8
Junior high school	234	29.4
Senior high school & above	76	9.5
School type		
Public	498	71.1
Private	202	28.9
Religion		
Christianity	734	91.8
Islam	66	8.3
Housing type		
Compound house	531	66.6
Flat/Apartment	87	10.9
Detached or semidetached house	176	22.1
Kiosk/Container/Other	3	0.4
Relation of caregiver to child		
Biological parent	644	80.9
Family member	141	17.7
Guardian	11	1.4

Note. $N = 800$.

Prevalence of ACEs

Figure 1 shows the prevalence of all individual ACEs measured in the study population. The most prevalent ACEs reported by parents for all the children and teens were community violence (50.2%), separated parents (34.0%), physical abuse (33.4%), emotional abuse (28.9%), domestic violence (27.9%), and parental death (22.8%). Some of the less prevalent ACEs (reported by less than 5% of respondents) included living with an incarcerated household member (4.3%), separation due to immigration (3.4%), sexual abuse (3.4%), living in a foster home (2.5%), and bad treatment based on discrimination (2.0%). Child incarceration and romantic partner abuse were measured for only the teens; less than 2% of the parents/caregivers reported that their child had been exposed to romantic partner abuse. No teen was reported to have been incarcerated.

Figure 1. *Prevalence of Parent/Caregiver-Reported ACEs in the Cape Coast Metropolis, Ghana*



Note. $N = 800$.
* Measured in teens only.

Table 3 shows the prevalence of ACEs by developmental age and sex. A greater proportion of males than females experienced emotional abuse (32.3% vs. 26.5%; $p = .07$) and physical abuse (37.2% vs. 30.7%; $p = .05$), although the differences were not statistically significant. About 51% of the females and about 49% of males were reported to have experienced community violence ($p = .55$). The proportions of males (3.6%) and females (3.2%) that were reported to have experienced sexual abuse in their childhoods did not differ significantly ($p = .77$).

However, for some ACEs, the analyses revealed statistically significant differences between the proportions of children and teens who had been exposed. Greater proportions of teens than children were reported to have experienced separated parents (43.3% vs. 26.6%; $p < .001$), separation by immigration (6.8% vs. 0.7%; $p < .001$), child experiencing serious illness (24.1% vs. 14.0%; $p < .001$), and child experiencing bad treatment based on discrimination (3.2% vs. 1.1%; $p = .04$). The ACEs that were more prevalent among the children than the teens were emotional abuse (33.5% vs. 23.2%; $p = .001$), bullying (29.5% vs. 11.0%; $p < .001$) and parental death (25.8% vs. 11.9%; $p = .02$).

ACE Scores

Table 4 provides the distribution of ACEs scores by sex and developmental stage according to five cumulative score categories (0, 1+, 2+, 3+, 4+). This representation of ACEs scores was created for purposes of illustrating the prevalence of ACEs in this study sample and for purposes of comparing these findings with ACE prevalence in other studies globally.

A large majority (84.9%) of the study participants had been exposed over their lifetime to at least one of the ACEs measured; 69.1% had experienced two or more; 51.8% had experienced three or more; and 36.9% had experienced four or more (see Table 3). About 17% of females and 13% of males had not experienced any of the ACEs measured in the study. The proportion of males that had experienced 4 or more ACEs (38.6%) was not significantly higher than the proportion of females that had experienced 4 or more ACEs (35.6%).

Table 3. *Prevalence of Adapted CYW ACE-Q Measure Items by Sex and Developmental Stage*

		Sex					Developmental stage				
ACR	Total	Females		Males		*p*	Children		Teens		*p*
	Y/*n*	Y/*n*	%	Y/*n*	%		Y/*n*	%	Y/*n*	%	
Separated parents	271/797	169/464	36.4	102/333	30.6	.09	118/444	26.6	153/353	43.3	<.001
Incarcerated household member	34/797	19/464	4.1	15/333	4.5	.78	18/444	3.8	16/353	4.5	.74
Mentally ill household member	45/800	30/466	6.4	15/334	4.5	.24	21/445	4.7	24/355	6.8	.21
Domestic violence	223/798	123/466	26.4	100/332	30.1	.25	114/443	25.7	109/355	30.7	.12
Drug or alcohol use (household member)	168/790	108/460	23.5	60/330	18.2	.07	89/441	20.2	79/349	22.6	.40
Sexual abuse	27/799	15/466	3.2	12/333	3.6	.77	11/444	2.5	16/355	4.5	.12
Emotional abuse	231/799	123/465	26.5	108/334	32.3	.07	149/445	33.5	82/354	23.2	.001
Physical abuse	267/799	143/466	30.7	124/333	37.2	.05	198/445	44.5	69/354	19.5	<.001
Physical neglect	102/797	59/466	12.7	43/331	13.0	.89	52/443	11.7	50/354	14.1	.32
Emotional neglect	54/790	30/458	6.6	24/332	7.2	.71	23/437	5.3	31/353	8.8	.05
Lived in foster home	20/798	9/464	1.9	11/334	3.3	.23	14/444	3.2	6/354	1.7	.19
Bullying	170/797	97/464	20.9	73/333	21.9	.73	131/444	29.5	39/353	11.0	<.001
Parental death	182/800	110/466	23.6	72/334	21.6	.50	115/445	25.8	67/355	18.9	.02
Immigration separation	27/800	18/466	3.9	9/334	2.7	.37	3/445	0.7	24/355	6.8	<.001
Serious illness	147/797	84/465	18.1	63/332	19.0	.74	62/444	14.0	85/353	24.1	<.001
Community violence	397/791	236/462	51.1	161/329	48.9	.55	210/439	47.8	187/352	53.1	.14
Discrimination	16/790	10/459	2.2	6/331	1.8	.72	5/445	1.1	11/345	3.2	.04
Romantic partner abuse*	6/352	4/229	1.7	2/123	1.6	.93	-		6/353	1.7	-
Incarcerated child*	0/352	0/230	0.0	0/122	0.0	-	-		0/352	0.0	-
Number of ACEs exposed to						.38					.01
0 ACEs	121/800	77/446	16.5	44/334	13.2		77/445	17.3	44/355	12.4	
1–3 ACEs	384/800	223/446	47.9	161/334	48.1		193/445	43.4	191/355	53.8	
4 or more ACEs	295/800	166/446	35.6	129/334	38.6		175/445	39.3	120/355	33.8	

Note. Y = number who answered yes; *n* = number who provided an answer.
*Question answered for teens only. For 3 of the 355 teens, the parent/caregiver did not respond to this question.

Table 4. *ACE Score Categories by Sex and Developmental Stage*

ACE score categories	Total	Sex			Developmental stage		
		Female (n = 466)	Male (n = 344)		Children (n = 445)	Teens (n = 355)	
	n (%)	n (%)	n (%)	p	n (%)	n (%)	p
0 ACES	121 (15.1)	77 (16.5)	44 (13.2)	.19	77 (17.3)	44 (12.4)	.05
1 or more ACEs	679 (84.9)	389 (83.5)	290 (86.8)	.19	368 (82.7)	311 (87.6)	.05
2 or more ACES	553 (69.4)	327 (70.2)	228 (67.7)	.56	304 (68.3)	251 (70.7)	.47
3 or more ACES	415 (51.9)	250 (53.6)	165 (49.4)	.23	231 (51.9)	184 (51.8)	.98
4 or more ACES	295 (36.9)	168 (35.6)	129 (38.6)	.39	175 (39.3)	120 (33.8)	.11

Note. N = 800.

Discussion

Ours is the first known study to describe the prevalence of ACEs among any population of youth in Ghana. ACEs can contribute to a range of deleterious physical and mental health consequences throughout the lifespan (Felitti et al., 1998), and can also contribute to poor educational outcomes and antisocial behaviors in childhood (Phasha, 2014). Thus, the early identification of ACE exposure in children and teens can inform interventions to address these negative sequelae.

This is the second known study to have used a translated version of the CYW ACE-Q (Bucci et al., 2015) to measure the prevalence of ACEs among children in a context outside the United States[2], and is the first known study to have compared the prevalence and forms of ACEs between the children and teens in the sample with children and teens globally. The CYW ACE-Q adopted in the current study expanded upon the ACE categories in the original ACEs Study Questionnaire (Koita et al., 2018) that prior studies had used.

For example, the category of community violence, or violence outside the home, is included in the CYW ACE-Q (Bucci et al., 2015), but is not in the original ACEs Study Questionnaire (Felitti et al., 1998). This is a significant expansion, given the known global prevalence of this particular ACE category, especially in lower-middle-income countries such as Malawi (Kidman et al., 2020), Honduras (Kappel et al., 2021), and now Ghana itself where, in this study, community violence emerged as the most commonly reported ACE (50.2%). The study in Poland by Mejia et al. (2018) that examined the prevalence of ACEs in a sample of pediatric patients using the CYW ACE-Q found that 30% of patients had experienced 1 to 3 ACEs, and 27.3% had experienced 4 or more, raising concerns over toxic stress and its associated medical and emotional sequelae. Our study, which also used the CYW ACE-Q, found a higher prevalence of ACE exposure among the children and adolescents in the Cape Coast Metropolis of Ghana than was reported in the Polish study, with 36.9% having experienced 4 or more ACEs.

[2] The first, Mejia et al. (2018), was conducted in Poland.

The findings of the current study reveal an overall higher prevalence of ACEs in Ghana than in the United States (Felitti et al., 1998), England (Bellis et al., 2014), and the WHO European region (Hughes et al., 2021). The original ACEs study (Felitti et al., 1998) found that 52.1% of adult respondents reported having experienced at least one ACE, while ACE surveys collected across the WHO European region revealed that almost half of young adults had experienced one ACE before the age of 18 (Bellis et al., 2014; Hughes et al., 2021). In the present study, a much higher proportion — about 85% — of the children and teens reported having experienced at least one ACE (see Table 3). And whereas in the original ACEs study, 6.2% of adult respondents reported having experienced 4 or more ACEs, fully 36.9% of children and teens in the current study reported having experienced 4 or more ACEs in their lifetimes.

The findings of this study more closely mirror trends in studies conducted in South and Central America and in several countries in Sub-Saharan and South Africa. For example, as in the present study, which found that 88% of teens reported having experienced at least one ACE, a study conducted in Brazil found that 85% of teens[3] reported having experienced at least one ACE (Soares et al., 2016). Findings of the present study also more closely resemble the prevalence rates of ACEs in Burundi, where child abuse and neglect were found to be higher among adolescents than they are in high income countries (Charak et al., 2017) such as United States (Crouch et al., 2019) and England (Bellis et al., 2014). This reflects an overall global trend, in which children of older age groups and in lower-income countries tend to report a higher prevalence of ACEs (Audu et al., 2009; Crouch et al., 2019). We speculate that as children grow older, they are more likely to be exposed to ACEs. However, a unique finding of this study was that parental death, emotional abuse, and bullying were higher among children than teens. The authors speculate that this is attributable to cultural factors such as reluctance to disclose parental deaths and remarriages in the Ghanaian context. The authors will focus a future report on how these factors may have influenced parent/caregiver disclosures of ACEs suffered by their children and teens.

The findings of the current study are even more closely aligned with those of ACEs studies conducted in Malawi (Kidman et al., 2020) and Honduras (Kappel et al., 2021): we found that community violence (50.2%), separated parents (34.0%), and physical abuse (33.4%) were the most prevalent forms of ACE; as expected, they were significantly higher among teens and adolescents than among younger children. The prevalence rates of these three and other ACEs measured in this study greatly contrast with the findings from other countries in Africa, which may be attributable to particular socioeconomic differences between Ghana and other African contexts in which data have been collected. Rates of physical abuse in this study also roughly mirror rates of corporal punishment by parents measured in a South African National Survey (Dawes et al., 2005).

[3] Unlike the present study, the teens (ages 11 and up) in the Brazilian study completed the ACEs measure on their own.

In contrast to this study, Kabiru et al.'s (2014) study among adolescents in Kenya found that physical and emotional neglect, food insecurity, and parental unemployment were the most commonly reported adversities. Another contrasting finding was that parental separation or divorce was the least frequently reported adversity in the Kenyan study. Kabiru et al. noted that the higher rates of physical and emotional neglect in Kenya were attributable to the urban slum contexts where the data were primarily collected, as these settlements generally experience significantly higher rates of crime, extreme poverty, and food insecurity, and have experienced marginalization by local and national governments.

A Singapore study that collected data on the prevalence of ACEs among adults found that participants reported emotional neglect as the most prevalent ACE and noted that the significant level of poverty and economic strain in Singapore may have contributed to high rates of this ACE (Subramaniam et al., 2020). Similarly, in Burundi, Charak et al. (2021) found that physical and emotional neglect were the most common adversities among both children and adults. They noted that the high rates may be the result of many national cycles of political violence and armed conflict, which have contributed to significant nationwide poverty and ethnic divisions: many families have experienced economic loss, disruptions in their family relations, and decreased access to the child welfare, education, and public health systems.

While rates of physical abuse as high as 64% have been observed in some African countries (Meinck et al., 2015), the reported rate of physical abuse in this study (33.4%) more closely resembles the rates of around 33% measured in South Africa (Dawes et al., 2005). However, the findings of this study indicate significantly higher rates of physical abuse overall compared with many other countries: in Brazil, almost 7% of adolescents reported having experienced physical abuse (Soares et al., 2016), while in Singapore, around 5% of adults reported having experienced physical abuse in childhood (Subramaniam et al., 2020). One study that examined the prevalence and risk factors for child physical abuse rates in Africa found that children were more likely to undergo physical abuse if they resided in semi-urban areas, and if they had a history of sexual abuse victimization (Meinck et al., 2015).

VanderEnde et al. (2018) found that more males than females in Malawi had experienced emotional violence (30% vs. 19%); in Kenya, Kiburi et al. (2018) similarly found that more males reported physical and emotional abuse. However, a study conducted in Brazil (Soares et al., 2016) that found differences in the prevalence of ACEs between male and female adolescents found that females self-reported more physical and emotional abuse, domestic violence, and neglect. A study in Honduras also showed a significantly higher prevalence of childhood emotional, physical, and sexual violence among females than males (Kappel et al., 2021), and a study conducted in Kenya similarly found that overall more females than males reported experiencing sexual abuse (Kiburi et al., 2018). Findings from these countries contrast with the present study, which did not find a significant difference in the proportions of males and females who were reported to have experienced sexual abuse (3.2% for females vs. 3.6% for males; $p = .77$).

Implications

Emerging empirical evidence demonstrates that higher ACE prevalence rates can be understood through Bronfenbrenner's ecological model of human development (Bronfenbrenner & Morris, 1998; Meinck et al., 2015), in which community-level, household-level, caregiver-level, and individual child-level factors are conceptualized as interacting spheres of influence on child abuse and other ACEs. Various factors relating to culture and to child protective services also influence the risks and the protective factors across these levels, thus accounting for variations in ACE prevalence rates across different countries and contexts throughout Africa. Several studies have shown that household-level factors such as domestic violence, family conflict, and illness within the household are influential on risk factors for the ACE of physical abuse.

Per this model, the high prevalence of separated caregivers (34%) in this study might be related to particular family- or household-level factors that could explain the almost equally high prevalence of physical abuse (33%). Various community-level, household-level, and caregiver-level factors impacting family conflicts, in conjunction with factors related to culture and child protective services, may also account for the higher rates of physical abuse among children and adolescents in Ghana. Policy and interventions to address the prevalence of ACEs in Ghana may thus need to focus on multiple levels of the ecological model. However, more research is needed to understand the dynamic and interconnected processes occurring within family and community systems that influence children's increasing vulnerabilities to ACEs throughout their development and that influence these systems' protective responses to ACEs. As suggested in other studies that have examined the prevalence of ACEs globally, interventions to address child abuse and other forms of ACE should take into consideration the influence of cultural and sociopolitical factors (Ran et al., 2023). It has also been recommended that future studies should be longitudinal and involve multilevel and multiphase implementation of interventions (Cooke et al., 2023) to both prevent and treat the negative consequences of ACEs across an individual's lifespan.

In the context of the Cape Coast Metropolis, further exploration may be needed to ascertain causes and adapt interventions to address community violence and physical abuse, which are two of the highest reported ACEs in this study. Interventions relevant to and effective for enhancing community and family safety should be considered alongside policies to address weapons violence and other phenomena related to community violence and physical abuse. Further research should also be conducted to understand this phenomenon of community violence in greater depth, including its most prevalent forms and causes in this context. In line with recommendations from other extant literature (Meinck et al., 2015; Soares et al., 2016), future research that is intended to address the prevalence and consequences of ACEs should further examine how community violence can be addressed in a multilevel manner, at first through policies and other macro-level efforts intended to enhance public safety, and subsequently through meso- and micro-level clinical interventions intended to enhance treatment for the negative sequelae from this ACE.

Limitations

Because the data collected for this study did not come from the children and teens themselves, but rather from parents/caregivers who responded on their behalf, there was the potential for reporting bias. However, this bias may not be as pronounced as might be expected in another culture, given that many behaviors defined as ACEs on the questionnaire may be viewed as "normal" and therefore not need "hiding"; for example, in one South African study, parents freely reported using a belt for punishment of children (Dawes et al., 2005). Even so, in the particular case of dating violence, it is very possible that caregivers underreported their children's and teens' adverse experiences, as it is generally not accepted in Ghanaian culture and society for children and teens to be involved in romantic partnerships. Further bias could have resulted from lack of disclosure by the children and teens about romantic relationships they may have been involved in.

Additionally, although permission was obtained by developers of the CYW ACE-Q instrument to adapt it for use in Ghanaian culture, its reliability or validity in African contexts has not been demonstrated. As earlier stated, the CYW ACE-Q adopted in the current study expanded the ACE categories in the original ACEs Study Questionnaire (Koita et al., 2018) by adding new categories specific to the Cape Coast Ghanaian context that prior studies had not measured. Furthermore, cultural factors particular to the Ghanaian context may have affected parental disclosures of their children's and teens' ACEs, including that of parental death. Thus, this study's inclusion of these unique categories of ACEs, in addition to Ghana-specific cultural factors, poses difficulties with accurately comparing the prevalence of ACEs in Ghana with the prevalence of ACEs globally. Future research may adapt, implement, and test the validity and reliability of this instrument in order to enable its use as a tool to measure ACEs across a variety of African contexts and cultures.

Data for this study were not collected from the whole of Ghana and the Cape Coast Metropolis is not a representation of Ghana. Caution is therefore warranted in generalizing its findings and associated implications to the country as a whole.

Conclusion

This is the first known study to establish the prevalence of ACEs among children and teens in the Cape Coast Metropolis of Ghana. It is the second known to have used an adapted version of the CYW ACE-Q (Bucci et al., 2015) in a setting outside the United States. The use of this measure yielded rich data on various forms of ACE affecting this population of children and teens throughout their development. The study reveals that there is a high prevalence of ACEs in the Cape Coast Metropolis, and that community violence, parental separation, physical abuse, and emotional abuse are the most prevalent ACEs in the metropolis. The forms and high prevalence of ACEs identified in this study is similar to those of other low-income and lower-middle-income countries; the prevalence of ACEs in higher-income nations is lower. Future directions in policy should involve strategies to enhance community and family supports, and research should continue to investigate phenomena related to the prevalence of community violence and physical abuse in the Cape Coast Metropolis and other areas in Ghana.

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