
Parenting, Environment, and Early Child Development in Sub-Saharan Africa

2

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Early childhood is a critical period as rapid gains in physical, cognitive, and socioemotional domains of development constitute “building blocks” of children’s later growth. Despite consensus about the significance of early childhood, and what it portends about ontogeny in the balance of the life span, as well as the life-course consequences of both caregiving and the environments of early development, there is a surprising dearth of population-based multinational data from developing countries on the diverse experiences and conditions that promote or thwart child

well-being. Studies of development, caregiving, and context are requisite to encompass the full scope of childhood. However, context-related limitations continue to constrain our global understanding of child development and caregiving. A narrow participant database in the research literature is one of the major limitations. Perhaps only 10–20% of the body of developmental science emanates from regions of the world that account for perhaps 80–90% of the world’s population (Tomlinson, Bornstein, Marlow, & Swartz, 2014), and critics wisely reject broad generalizations derived from contextually restricted findings (Arnett, 2008; Bornstein, 2010; Henrich, Heine, & Norenzayan, 2010; Serpell, 1990). Thus, most of what is currently known about child development comes from studies of children in the minority developed world. Most of what is known about child development in the majority world of developing low- and middle-income countries (LMIC) still comes from studies of small samples in single locales, even if this situation is changing (for reviews, see Engle et al., 2007; Walker et al., 2007). Population-based multinational data from LMIC are indispensable for identifying countries, regions, and communities where children are at risk, crucial for monitoring which domains of child development are susceptible to which experiences, and necessary to expand the database on human development. Such data would also leverage better-informed national and international policies

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for early child development. Furthermore, taking such aggregates into account would improve our understanding of developmental trajectories for individuals and populations and help to ensure equality of opportunity to all children. The main aim of this chapter is to describe the contemporary situations of multiple domains of early child development across 14 developing sub-Saharan African countries.

Poverty in Sub-Saharan Africa

Sub-Saharan Africa (sometimes referred to as *Afrique Noire* or *Black Africa*) is a region best understood for its uniqueness, bewildering diversities, and perceived inconsistencies with Western paradigms of developmental science (Nsamenang & Lo-oh, 2010). Underlying apparent varieties are commonalities among its inhabitants that emanate from ecological adaptations and similarities in historical and present-day experiences. Some of the contextual influences on child development that set this region apart are its very low per capita income in comparison to other regions of the world, terrible burden of diseases including HIV/AIDS, numerous wars and conflicts resulting in displacements of persons, and high infant mortality and comparatively low child survival rates. The region also harbors numerous economically impoverished countries. Together, these factors render children in sub-Saharan Africa among the most disadvantaged.

The United Nations (UN, 2001, p. 2) defines poverty as “a human condition, characterized by the sustained or chronic deprivation of the resources, capabilities, choices, security and power necessary for the enjoyment of an adequate standard of living and other civil, cultural, economic, political and social rights.” The literature from the developed and developing worlds has cogently demonstrated numerous noxious links between child development and living in conditions of where families have little personal wealth and limited access to other forms of resources that support children’s health and competence. These associations are particularly important to bear in mind important, given esti-

mates of the millions of sub-Saharan children living in economically deprived circumstances (Harper, Marcus, & Moore, 2003).

Sub-Saharan-based knowledge remains largely uncharted territory (Nsamenang & Lo-oh, 2010). Almost all that is known about the region are by-products of European and American cultural precepts that were imported for the purpose of extending mainstream psychology (e.g., Pence & Nsamenang, 2008). Otherwise, issues pertaining to the region will continue to be disregarded or the likelihood of misinterpretation increased.

The MICS3

At the World Summit for Children held in 1990, the World Declaration on the Survival, Protection, and Development of Children and its Plan of Action in the 1990s were adopted. Signatory governments pledged to monitor progress toward achieving goals elaborated in the World Declaration. In response, UNICEF developed the Multiple Indicator Cluster Survey (MICS), a nationally representative and internationally comparable household survey for nation states to evaluate country-level progress of children and women in LMIC (UNICEF, 2006). The main purposes of the MICS are to support evidence-based policy formulation, assess trends, and measure disparities. The MICS plays a role in the global scene of planning and reporting on children and women, being a reliable source of data for many indicators that are difficult to find otherwise. The MICS is one of the main tools used to measure progress toward international goals, such as the Millennium Declaration, the Millennium Development Goals (MDGs), and the Sustainable Development Goals (SDGs).

The findings we report in this chapter come from wave 3 of the MICS (MICS3) administered between 2005 and 2010, representing more than 72,000 0- to 4-year-old children in 14 sub-Saharan African countries (Fig. 2.1). We used data from three of the five MICS3 Questionnaires. The Household Questionnaire

Fig. 2.1 14 Sub-Saharan African countries in this study



assesses education level and schooling of household members, water and sanitation, and support to children. The Questionnaire for Individual Women assesses maternal and newborn health. The Questionnaire on Children under Five assesses birth registration, early learning, and anthropometry. We used these MICS3 data to focus on four areas of child life: physical growth, household resources, caregiving, and discipline and violence. Although these multiple domains of child development are interlocked (Elder, Shanahan, & Jennings, 2015; Lerner, Hershberg, Hilliard, & Johnson, 2015), for heuristic purposes we treat them separately.

Child Growth

About 35% of under-5 child deaths, and 11% of the total global disease burden, are attributable to undernutrition (Black et al., 2008). Concerns about growth deficiencies and mor-

ality remain paramount in countries where poverty is endemic. In consequence, a primary MDG established by the United Nations was the reduction of undernutrition (United Nations, 2000). Approximately 167,000,000 children in developing countries are stunted; and, even though prevalence rates of stunting decreased from about 40% in 1990 to about 27% in 2010, projections suggest that about 22% of children in developing countries will likely be stunted in 2020 (De Onis, Blossner, & Borghi, 2012). Furthermore, Victora, de Onis, Hallal, Blossner, and Shrimpton (2010) identified pregnancy, and the first 2 years of life, as critical for the prevention of significant growth problems worldwide. Using data from the WHO global database on child growth and malnutrition, Victora et al. (2010) learned that children in Africa were born at nearly one standard deviation below average on weight-for-age (underweight) and about two-thirds of a standard deviation below average on height-for-age (stunting). From age 2 to age 5, African

children averaged more than two standard deviations below the global mean on both growth indicators.

Poor nutrition and unsanitary conditions are presumed to be the major causes of growth problems, such as stunting, but the link between household- and community-level conditions and children's health remains incompletely characterized. In societies where household facilities and access to material resources are generally low, even small differences in what is available may loom large in determining children's chance of survival and their growth trajectories (Boyle et al., 2006; Darmon & Drewnowski, 2008; Wachs, 2008). Because factors contributing to growth problems in early childhood tend to persist, and because of collateral damage to other biological systems, growth retardation in early childhood often augurs difficulties in cognitive processing and school achievement (Berkman, Lescano, Gilman, Lopez, & Black, 2002; Cheung, 2006; Martorell, Rivera, Kaplowitz, & Pollitt, 1992).

Household Resources

The quality of children's housing and the materials available in the home play instrumental roles in children's health and adaptive functioning. They also help determine what parents can do to help assure their children's well-being.

Quality of Housing For several decades, efforts have been made to establish standards pertaining to housing quality, both as regards the structural materials used to build homes (e.g., mud, thatch, wood) and the internal facilities (e.g., access to toilets, piped water, closed facilities for cooking, and refrigeration appliances). Studies in Ethiopia, Nigeria, Ghana, and Cameroon point to serious problems connected with crowding, poor construction, and inadequate facilities (Aribigbola, 2008; Cameron, 2009; Fiadzo, 2004; Muoghalu, 1991; Yongsi, 2010).

1. *Provisions for water.* WHO estimates that water contaminants account for 4% of all deaths and 6% of all disease burden for young

children. Several African studies indicate that, when water does not come directly into the house, contamination with bacteria and parasites is commonplace, resulting in diarrhea and malnutrition (Roberts et al., 2001; Teklemariam, Getaneh, & Bekele, 2000; Yongsi, 2010). Contaminated water becomes a source of disease that can lead to growth retardation and death (Abou-Ali, 2003; Halpenny, Koski, Valdes, & Scott, 2012; Nandy & Gordon, 2009; Ouattara, N'Guéssean, Yapi, & N'Goran, 2010). Only 58% of people in sub-Saharan Africa have access to improved drinking water sources (i.e., either piped into the home or from other nearby sources such as public taps, tube wells, boreholes, protected dug wells, protected springs, or rainwater collections; WHO/ UNICEF JMP, 2008).

2. *Sanitation facilities.* Not having proper facilities to deal with waste contributes to childhood illness and mortality (Agha, 2000; Mertens, Jaffar, Fernando, Cousens, & Feacham, 1992; Podewils, Mintz, Nataro, & Parashar, 2004) and can lead to behavior and academic problems (Grantham-McGregor & Fernald, 1997; Mendez & Adair, 1999). Fecal-oral spread of bacterial pathogens, resulting from lack of access to appropriate toilets, contributes to diarrhea and growth problems for children (Hong, Banta, & Betancourt, 2006; Podewils et al., 2004; Prüss-Üstün, Kay, Fewtrell, & Bartram, 2004). There is a higher incidence of intestinal parasites in children who share toilets or lack connection to a city sewer system (Ludwig, Fernando, Firmino, & Joao Tadeu, 1999; Mahfouz, El-Morshedy, Fargaly, & Khalil, 1997). Not having adequate toilet facilities at home is particularly problematic for young children as they struggle to withhold bowel movements and fear using pit latrines (Cameron, 2009; Curtis et al., 1995; Lindskog & Lundqvist, 1998).

3. *Food storage/refrigeration.* Poor food storage facilities are a major problem for health and growth in children (Hong et al., 2006; Motarjemi, Käferstein, Moy, & Quevedo, 1993). When homes lack adequate facilities, food is often left out for later consumption,

increasing the likelihood of contamination (Bartlett, 2005). Demographic and Health Surveys from developing countries show that fewer than 25% of urban households in sub-Saharan Africa have a refrigerator (Montgomery & Hewett, 2005). This circumstance creates risks for food contamination and gastrointestinal illness (Ehiri et al., 2001).

4. *Home construction materials.* Poor home construction leads to a diversity of health problems for children. Poor ventilation (often associated with inadequate flooring, wall composition, and roofing) is connected to poor indoor air quality and increased likelihood of respiratory illness (Awasthi, Glick, & Fletcher, 1996; Collins, Sithole, & Martin, 1990). In Cameroon, Yongsu and Ntetu (2008) found that a composite index of housing quality, which included composition of floors and walls, was associated with childhood diarrhea. A study of refugees in Sierra Leone found that rodents were more prevalent in poorly constructed homes, increasing the odds of Lassa fever among residents (Bonner et al., 2007).
5. *Cooking facilities.* WHO (2009) estimated that 2.3 billion people in developing countries use biomass fuels or coal for cooking, particularly in rural areas with limited access to electricity (74% in sub-Saharan Africa). An open stove with no chimney increases indoor pollutants and, as a study in Uganda showed, overall illness rates among family members (Awasthi et al., 1996; Collins et al., 1990; Herrin, Amaral, & Balihuta, 2013). Acute respiratory illness associated with exposure to indoor air pollution is a leading cause of death among young children (Gauderman et al., 2004); and having a stove that uses wood for fuel has been associated with stunting (Hong et al., 2006; Ricci & Becker, 1996). In sub-Saharan Africa, only 6% of homes that use biomass for cooking have improved cooking stoves (WHO, 2009). Having an open stove or fire in the home is also a significant risk factor for childhood burns.

Child survival seems especially sensitive to physical conditions present in the home, albeit how particular components of home conditions

are implicated in child health appears to vary from region to region and even within countries (Chalasanani, 2010; Leventhal & Newman, 2010; Marmot, 2005). Unfortunately, a high percentage of homes in developing countries lacks basic amenities (Aribigbola, 2008; Fiadzo, 2004).

Material Resources It is not yet fully clear how household material resources, such as TV, telephone, transportation, and electricity, relate to child well-being. About 1.3 billion people lack predictable access to electricity (International Energy Agency, 2012), with rural areas in developing countries being the most seriously affected (WHO, 2009). Access to electricity increases opportunities to learn from radio and TV and ensures that there will be light for reading and other learning activities (Kanagawa & Nakata, 2008); however, only 47% of traditional homesteads in South Africa had such access (Statistics South Africa, 2008). Having electricity reduces mortality in children under age 5 in developing countries (Ridder & Tunali, 1999; Wang, 2003; Wagstaff, Bustreo, Bryce, Claeson, & the WHO-World Bank Child Health and Poverty Working Group, 2004). Having transportation can also be critical in dealing with certain injuries and illnesses. Furthermore, only with access to transportation can both adults and children access resources that are farther from their dwelling, including attending school and going to facilities that afford opportunities for diversity of experience and increased income.

Formal and Informal Learning Resources As the number and variety of objects in a home increase, so do encounters between household members involving those objects (e.g., book reading; Tomopoulos et al., 2006). Modern times have witnessed increases in structured experiences that involve materials specifically designed to promote particular types of learning. These developments fit with societal goals pertaining to the significance of higher-order skills and independence. There is evidence from developing countries that stimulation in the home is associated with children's academic performance (Bradley & Corwyn, 2005; Chiu & McBride-Chang, 2006)

and to indicators of well-being, such as height and nutritional status (Chomitz, 1992; Church & Katigbak, 1991; Cravioto & DeLicardie, 1972).

Many African households have very few materials that children can use to stimulate learning (Aina, Agiobu-Kemmer, Etta, Zeitlin, & Setiloane, 1993; Drotar et al., 1999; Holding, Abubakar, Van Baar, Obiero, & van de Vijver, 2011). The paucity of learning materials present in African homes reflects high rates of poverty and generally low levels of maternal education (Bornstein, Putnick, Bradley, Lansford, & Deater-Deckard, 2015; Goldberg, 1977). Societal modernity, indexed by access to writing tablets, books, electricity, water, radios, TVs, and motor vehicles, is associated with children's improved cognitive functioning and self-managed behavior during play for families living in Kenya (as well as Belize, Nepal, and American Samoa; Gauvin & Munroe, 2009). That said, informal learning resources are items that are readily available in most home environments, but their construction and use may depend more on parental education and family assumptions about their children's future (i.e., things that reflect different aspects of overall standards of living; Bornstein, Putnick, Bradley et al., 2015). Consequently, the implications of children not using formal and informal learning resources may differ.

Being a child's guardian can be a formidable task in conditions of extreme poverty. Poor housing quality and limited access to material resources can directly undermine the health and adaptive functioning of children and limit what parents can do to protect children and promote their development (Bartlett, 1999; Evans, 2006; Leventhal & Newman, 2010).

Caregiving

The early years are the time when children first make sense of the physical world, forge their first social bonds, and first learn how to express and read basic human emotions. Parenting is a job whose primary object of attention and action is the child—altruistic healthy human children do not and cannot grow up without competent caregiving.

Beyond their children's survival, parents are fundamentally invested in their children's education and socialization broadly construed. Parents have universal responsibilities to educate and socialize young children in ways that are appropriate to their stage of childhood and to prepare young children to adapt to a wide range of life roles and contexts they will occupy as they grow. Thus, caregiver cognitions and practices contribute in important ways to the course and outcome of child development (Bornstein, 2002, 2015; Collins, Maccoby, Steinberg, Hetherington, & Bornstein, 2001). When they reviewed evidence linking compromised development with modifiable biological and psychosocial risks encountered by children from birth to 5 years of age, Kuklina, Ramakrishnan, Stein, Barnhart, and Martorell (2004) identified three aspects of caregiving consistently related to young children's cognitive and socioemotional competencies: cognitive stimulation, sensitivity and responsiveness to the child, and emotional warmth toward the child.

Caregiving has benefits as well as costs for offspring. Positive caregiving in terms of education and socialization promotes children's cognitive and social competencies and improves success in managing their lives. However, compromised caregiving jeopardizes optimal child development, especially among parents who lack the resources, knowledge, investment, or competencies to rear their young so as to augment individual and common good (Bugental & Grusec, 2006). Societal variation in beliefs and behaviors is always impressive, whether observed among different ethnic groups in one nation or across nation states.

The MICS asks about mothers' specific cognitive caregiving practices in terms of reading, telling stories, and naming, counting, and drawing with their young children. Consider caregivers' reading to children. Joint book reading exposes children to vocabulary and concepts that are not commonly used in everyday conversations (DeTemple & Snow, 2003; Hoff-Ginsberg, 1991); for example, mean length of utterance and responsive replies to children are higher during book reading compared to play and mealtimes (Crain-Thoreson, Dahlin, & Powell, 2001; Lewis & Gregory, 1987; Sorsby &

Martlew, 1991). However, reading to children is widely variable within and between cultures (e.g., Bornstein & Putnick, 2012; DeBaryshe, 1993; Payne, Whitehurst, & Angell, 1994).

Closely related to reading are the other cognitively enriching activities asked about in the MICS. The oral tradition of storytelling is among the oldest means of communicating cultural ideas. Storytelling is in part a linguistic and educative activity (Bruner, 1986; Egan, 1995, 1999), and storytelling constitutes a prominent pastime in most cultures in the developing world (Harari, 2015). Wells (1986) documented links between storytelling and school success and found that literacy development relied on consistent exposure to storytelling and narrative discourse in the home. Like reading, storytelling promotes a range of language and literacy skills in children from complexity of vocabulary and sentence structure to imagination and originality in narrative ability. Caregiver speech directed to young children, as through storytelling, is crucial for early child cognitive development for many reasons. Language is among the most immediate and relevant means parents have to convey both information and affect to children (Bornstein et al., 1992; Garton, 1992; Thiessen, Hill, & Saffran, 2005). Verbal engagement between parents and young children is one of the strongest influences on subsequent language development (Hart & Risley, 1995), and information-salient speech (especially tutorial and didactic features such as naming) has positive predictive associations with child language acquisition (Hoff, 2015; Tamis-LeMonda & Bornstein, 2015).

Young children's numerical experiences provide a foundation for the formulation of standards for early childhood education (Clements, Sarama, & DiBiase, 2004). The mathematics knowledge that children acquire before they begin formal schooling has manifest ramifications for school performance and later career options (National Mathematics Advisory Panel, 2008).

Finally, although the arts often are viewed as a matter of "feeling" or "inspiration," they draw on a wide range of cognitive abilities and skills (Gardner, 1980, 2004; Goodnow, 1977). For exam-

ple, drawing involves perceptive observations of the visual-spatial world, sensitivity to multiple aspects of spatial displays, and capacity to represent information graphically.

The MICS also asks about parents' socioemotional caregiving in terms of playing with children, singing songs, and taking children out of doors. Adults influence the development of child play in many ways: by provisioning the play environment, modeling, engaging children actively and symbolically, responding to children's overtures, and scaffolding more advanced play (Bornstein, 2007). When children play with more mature caregivers, they are furnished with models, stimulants, materials, and opportunities to perform at levels above those they may achieve on their own (Vygotsky, 1978). During such play, children are also guided in the recreation, expression, and elaboration of symbolic themes (Tamis-LeMonda, Katz, & Bornstein, 2002). In some places, caregivers consider play with children to be a central element of the parental role and take an active part in child play, although they may emphasize different aspects (Bornstein, Haynes, Pascual, Painter, & Galperín, 1999; Haight, Wang, Fung, Willians, & Mintz, 1999). In other places, caregivers eschew play with children, reportedly attach no particular value to play, and do not view play as especially significant in children's development (Farver, 1993). Among the Yoruba, only about 11% of children play with toys (Aina et al., 1993). Agiobu-Kemmer (1984) reported that Nigerian mothers needed to be told to play object games with their children.

Like play, children experience music in a variety of ways: through singing, performing on instruments, listening to performances, and dancing. Singing conveys information and emotion at multiple levels from the topics and words of the song through the rhythm and melody of the music to emotional connections between singing partners. Singing is an enjoyable and vital social activity throughout the developing world (Huron, 2003; Trehub & Trainor, 1998). Singing does not require literacy and appears to be effective in sustaining child attention (Nakata & Trehub, 2004). With children's attention captured, caregivers can use song to convey emotional information, and

singing allows adults and children to synchronize their emotional states, affording an important social regulatory function (Bergeson & Trehub, 1999; Dissanayake, 2000; Nakata & Trehub, 2004; Trehub & Trainor, 1998). Caregiver sensitivity and child affect regulation play important roles in the development of secure attachment (de l'Etoile, 2006), and singing consolidates this vital feature of the mother-child relationship (Standley & Whipple, 2003). The MICS also asks about mothers taking children outside the house or their common enclosure which facilitates parent and child sharing new sights, sounds, and other events that deepen their relationship.

Parents' activities are directed to meet the biological, physical, cognitive, and socioemotional requirements of children. Caregiving plays an influential part in early child development because it regulates the majority of child-environment interactions and helps to shape child adaptation (Bornstein, 2015). Many studies evidence short- and long-term influences of caregiving practices on child development. By reading, telling stories, and engaging in naming, counting, and drawing with their children, parents ready their children with basic cognitive skills and set the stage for children's entry into the worlds of literature, school, and culture. By playing with their children, singing songs, and taking them out of doors, parents instill in their children a foundation of socioemotional competencies and confidence to engage the wider social world.

Challenging even in optimal circumstances, successful caregiving is rendered extraordinarily more difficult when family resources are inadequate. Edin and Lein (1997) described poor mothers' constant struggles to provide food, housing, and other necessities as well as keep their children out of danger. It is hypothesized that parents under such stress would generally have difficulty mobilizing effective levels of caregiving (Repetti & Wood, 1997). In Western settings, low-socioeconomic status (SES) parents are less likely to provide children with stimulating learning experiences, such as reading (Feitelson & Goldstein, 1986) or appropriate play materials in the home (Gottfried, 1984). Lower-SES mothers also converse with their children less, and in systematically less

sophisticated ways, than middle-SES mothers do with their children (Hoff, 2015). In McLoyd's (1998) analysis, the stresses on poor parents stemming from the day-to-day struggle to find resources, and the stresses of trying to cope with living in deteriorated dangerous circumstances, likely undermine caregiving skills and contribute to disorganized family life.

Discipline and Violence

Parents in all countries are faced with the task of socializing children to be competent members of their society. However, the values that parents place on particular child characteristics, and parents' goals for their children's future development, differ considerably across countries (Bornstein, 2010). As a result, parents' socialization practices may vary in part as a function of their childrearing aims and expectations about desirable behavioral outcomes for their children (Bornstein & Lansford, 2010). Parents' discipline strategies embody an important means parents use to socialize children because discipline can function to correct misbehavior and promote desired behaviors in the future. Parents hold a wide range of beliefs regarding the acceptability and advisability of different forms of discipline and marshal a wide range of discipline practices to manage children's behavior (Mistry, Chaudhuri, & Diez, 2003). Despite within-country differences in these beliefs and behaviors, many appear to be shaped by the cultural context in which parents live (Garcia-Coll & Magnuson, 1999).

Parents' range of responses to children's misbehavior includes explanation and reasoning, isolation, removal of privileges, and diverse forms of physical violence (spanking, slapping, and restraining), to name a few. Although corporal punishment has received more research attention than other forms of discipline, parents differ in their use of corporal punishment and in their use of a variety of other discipline strategies. For example, in some cultures, calling the child derogatory names is accepted and practiced as a means of teaching the child right from wrong, whereas in other cultures this kind of name-calling would be

deemed verbally abusive (Fung, 1999). Likewise, some cultural groups rely more heavily on the manipulation of privileges to manage children's misbehavior than do other cultural groups (Kim & Hong, 2007). It is possible to conceptualize parents' nonphysical and physical discipline strategies as representing a gradient of severity, ranging from mild (e.g., offering explanations) to harsh (e.g., yelling or name-calling) verbal techniques and mild (e.g., spanking) to harsh (e.g., beating with an object) physical techniques.

Although societies differ in the degree to which parenting practices are constrained by the social group versus allowed to vary, parents in many societies are given considerable latitude in socializing their children in ways that the parents themselves deem to be acceptable and appropriate. Because of concerns that children are vulnerable to abuse or neglect if parents' socialization practices are left solely to the parents' discretion, children's rights to protection (as well as to nutrition, clean water, and a range of other issues) were made the focus of international attention in the Convention on the Rights of the Child (CRC). The CRC was designed to protect children from abuse and exploitation in a number of domains, and the scope of the CRC has expanded to protect children from physical abuse within their homes. The United Nations conducted a global study of violence against children, which concluded with a goal of putting "an end to adult justification of violence against children, whether accepted as 'tradition' or disguised as 'discipline'" (Pinheiro, 2006, p. 5). Because most physical abuse stems from physical discipline (e.g., Gil, 1970), and because a sizable contingent of scholars, practitioners, and parents defines any form of physical discipline as physical abuse (see Whipple & Richey, 1997), parents' discipline strategies have come under scrutiny in many countries as a result, at least in part, of countries having ratified the CRC. The CRC has been one impetus in shaping UNICEF's position that harsh verbal discipline and physical discipline are harmful to children (see Gershoff, 2002, for a review) and, therefore, unacceptable. Indeed, several countries have legally banned the use of physical discipline (Durrant, 2008).

The present study documents a range of discipline practices parents reported using in 14 sub-Saharan African countries.

The anthropological literature has a history of comparing childrearing practices and value systems across cultural groups using qualitative, ethnographic approaches. For example, Beatrice and John Whiting's Six Cultures Project incorporated observations of children, interviews with mothers, and ethnographic notes to understand parenting practices and children's behavior in Mexico, India, Kenya, the United States, Japan, and the Philippines (Whiting & Whiting, 1975). Using archival ethnographic data collected by anthropologists in 186 preindustrial societies, Ember and Ember (2005) found that several societal-level factors were related to the use of physical discipline in particular. For example, physical discipline was more frequent in societies with higher levels of social stratification and undemocratic political decision making, which the authors suggested may support the theory that parents use physical discipline to socialize children to live in a society with power inequalities. Despite this ethnographic evidence that parents' discipline strategies differ across cultural contexts, the vast majority of such studies in the quantitative developmental science literature have been conducted using North American and European samples, and studies of other cultural groups often have relied on families that have immigrated to North America and Western Europe (for exceptions, see Gershoff et al., 2010; Lansford et al., 2005; Lansford & Deater-Deckard, 2012). Thus, the extent to which parents use different types of discipline strategies is virtually unknown for those countries that are underrepresented in developmental science.

Our MICS analyses tally how often parents and other caregivers in their household used 11 different disciplinary behaviors within the last month: nonviolence (offering explanations, removing privileges), psychological aggression (yelling, name-calling), physical violence (spanking, shaking), and severe physical violence (slapping on the head, beating with an object) as well as general endorsement of the use of corporal punishment.

Methods of Study in 14 Sub-Saharan African Countries

Participants

Data were obtained from 14 developing countries in sub-Saharan Africa: Burkina Faso, Burundi, Cameroon, Central African Republic, Côte D'Ivoire, Djibouti, the Gambia, Ghana, Guinea-Bissau, Mozambique, Nigeria, Sierra Leone, Somalia, and Togo (Fig. 2.1). Together, three countries are east, one is south, and the remainder are west and central; these regions differ with respect to economic development and frequency of exposure to emergencies and crises. In consequence, we cannot treat all the same. However, these countries all constitute developing nations (National Center for Children in Poverty, 1999; UNICEF, 2006), as defined with reference to the World Bank's system of classification of economies based on gross national incomes per capita, quality of life (life expectancy, literacy rates), and economic diversification (labor force, consumption). Families with at least one child under

5 years composed the samples. If the family had more than one child younger than 5 years of age, a single child was randomly selected from the family for inclusion. Characteristics of the samples are presented in Table 2.1.

Procedures

We used data from the third round of the Multiple Indicator Cluster Survey (MICS3; UNICEF, 2006). Each country designed and selected a national probability sample and field implemented the MICS3 with minimum deviation from an overall standard design. A three-stage sample frame was used: (1) primary sampling units (PSUs) were defined, if possible, as census enumeration areas, and they were selected with systematic probability proportionate to size (pps); (2) segments (clusters) were identified; and (3) households were selected within each segment that were to be interviewed in the survey. To foster simple implementation, implicit stratification was followed. When this form of geographic stratification is used together with pps

Table 2.1 Sample characteristics

	N	Child age (months)		Child gender	Caregiver age (years)		Caregiver education		Crowding	
		M	SD	% female	M	SD	M	SD	M	SD
Burkina Faso	4,168	27.14	15.99	49.8	30.54	8.14	0.17	0.47	2.84	1.12
Burundi	4,694	28.83	16.69	51.5	31.41	8.56	0.81	0.53	3.26	1.23
Cameroon	4,490	27.02	16.38	50.5	29.70	9.44	1.05	0.78	2.82	1.23
Central African Republic	6,706	26.94	16.93	49.7	28.87	9.23	0.68	0.70	2.55	1.63
Côte D'Ivoire	6,604	27.30	16.57	48.5	29.68	9.30	0.47	0.69	3.30	1.72
Djibouti	1,549	29.67	16.02	47.4	32.17	8.23	0.52	0.78	4.02	2.15
Gambia	4,909	25.64	15.97	49.0	30.05	9.03	0.51	0.77	2.76	1.18
Ghana	2,661	29.05	16.83	48.8	31.94	9.22	0.86	0.90	3.43	1.59
Guinea-Bissau	4,532	27.05	16.30	51.7	30.38	10.11	0.40	0.66	2.89	1.80
Mozambique	8,246	27.81	16.80	50.5	29.50	9.33	0.84	0.63	3.27	1.37
Nigeria	12,292	27.74	16.14	48.9	30.82	9.01	0.75	0.91	3.04	1.54
Sierra Leone	4,258	28.44	16.44	50.6	31.95	10.86	0.32	0.67	2.84	1.58
Somalia	3,889	28.51	17.15	48.8	30.66	9.61	0.41	0.56	4.38	2.18
Togo	3,169	27.50	16.37	49.4	30.82	8.83	0.61	0.74	2.93	1.28
Total	72,167	27.60	16.50	49.7	30.38	9.30	0.63	0.76	3.09	1.59

Note: Caregiver education is coded as 0 = no schooling or only preschool; 1 = primary school, nonstandard curriculum, religious school; 2 = secondary school, vocational, or tertiary school; 3 = higher education. Crowding is coded as the average number of people in the household per bedroom/sleeping area

sampling, the sample proportionately distributes into each of a nation's administrative subdivisions as well as its urban and rural sectors.

Child growth indicators were derived from the anthropometry module of the MICS3 Questionnaire for Children Under Five. Household resources questions pertaining to quality of housing, material resources, and formal and informal learning resources were taken from the water and sanitation and household characteristics modules of the Household Questionnaire and the child development module of the Questionnaire for Children Under Five. Caregiving questions were taken from the birth registration and early learning module of the Questionnaire for Children Under Five. Discipline and violence questions were taken from the child discipline module of the Household Questionnaire and were only asked of caregivers of children over two (therefore, the sample for these items consists of caregivers of children ages 2–4). Some countries did not ask particular modules. If the question was not asked, it is represented as missing data (–) in the tables. MICS3 Questionnaires are available at <http://mics.unicef.org/tools?round=mics3>.

Child Growth

As part of the MICS administration, trained administrators weighed and measured every child younger than five who was present in the home using standard equipment and a common WHO protocol provided by UNICEF (2012). Using the resulting weight and height data, we adapted and implemented the World Health Organization's (WHO, 2011) Child Growth Standards SPSS macro for the MICS data. This macro uses standard data files to calculate *z*-scores for height-for-age and weight-for-age based on WHO (2006; WHO & UNICEF, 2009) Child Growth Standards. We then used predefined cutoff values of two SDs below the mean to identify children who were stunted (<–2.00 SD on height-for-age) and underweight (<–2.00 SD on weight-for-age). According to the World Health Organization (WHO, 1997), low height-for-age and stunting most often reflect prolonged undernutrition. Stunted children tend to

have a history of being underfed or ill. Being underweight may also reflect poor nutrition and chronic illness, but a child who scores low on this indicator could either be a stunted child of appropriate weight for stature or a taller child who is underweight, making interpretation more challenging. We report both height-for-age and the percentage who are stunted and weight-for-age and the percentage who are underweight because stunting and underweight are used more for policy reasons, but height-for-age and weight-for-age are continuous variables that have better variance for analytic purposes. Furthermore, *z*-scores and percentages may lead to different conclusions.

Household Resources

Quality of Housing

Following the WHO and UNICEF's (2008) drinking water ladder, we coded drinking water into two categories: *unimproved* (0; unprotected springs or wells, tanker-trucks or carts with a small tank/drum, surface water, or bottled water) or *improved/piped* (1; public taps or standpipes, tube wells or boreholes, protected wells or springs, rainwater collection, or piped directly to the household dwelling, plot, or yard). Following the sanitation ladder recommended by WHO and UNICEF (2008), we coded toilet facilities into two categories: *open defecation/unimproved* (0; no facilities/toileting in the bush or field, pit latrines without a slab or platform, hanging latrines, and bucket latrines) or *improved* (1; flush or pour-flush latrines, ventilated improved pit (VIP) latrines, pit latrines with slabs, and composting toilets). The main material of the dwelling floor was recoded into the two superordinate categories of natural/rudimentary (0) or finished flooring (1). Cooking was recoded to indicate whether household cooking used *an open fire or stove* (0) or *a closed stove* (1). Refrigerator was coded as *not present* (0) or *present* (1) in the household.

Household Materials

Nine household items (radio, TV, mobile telephone, nonmobile telephone, motorcycle or scooter, animal-drawn cart, car or truck, and boat with motor)

were coded as *absent* (0) or *present* (1). Mobile and nonmobile telephone were recoded into a single item to indicate the *absence* (0) or *presence* (1) of either type of telephone in the household. Four items about household transportation—motorcycle or scooter, animal-drawn cart, car or truck, and boat with a motor—were recoded into a single item to indicate the *absence* (0) or *presence* (1) of any kind of transportation not powered by humans.

Formal Learning Resources

The number of adult books and children's books in the household was recoded into two categories to indicate *no books* (0) or *1 or more books* (1). Store-bought toys were coded as (0) *child does not play with the item* or (1) *child plays with the item*.

Informal Learning Resources

Three categories of children's toys (household objects, outside objects, and homemade toys) were coded as (0) *child does not play with the item* or (1) *child plays with the item*.

Caregiving

Children's primary female caregivers were asked whether they, the child's father, or someone else had (1) read to the child; (2) told the child stories; (3) named, counted, or drew with the child; (4) sang songs to the child; (5) taken the child outside the yard, compound, or enclosure; or (6) played with the child in the past 3 days. Each item was coded as 0 = *no* or 1 = *yes*.

Discipline and Violence

Mothers or primary female caregivers were told, "All adults use certain ways to teach children the right behavior or to address a behavior problem. I will read various methods that are used and I want you to tell me if you or anyone else in your household has used this method with (name of child) in the past month." Caregivers were then asked whether they or anyone in their household had used each of 11 nonviolent, psy-

chologically aggressive, or physically violent practices with the target child in the last month: (1) explained why something (the behavior) was wrong; (2) gave the child something else to do; (3) took away privileges, forbade something, or did not allow the child to leave the house; (4) shouted, yelled, or screamed at the child; (5) called the child dumb, lazy, or another name like that; (6) spanked, hit, or slapped the child on the bottom with a bare hand; (7) hit or slapped the child on the hand, arm, or leg; (8) shook the child, (9) hit the child on the bottom or elsewhere on the body with something like a belt, hairbrush, stick, or other hard object; (10) hit or slapped the child on the face, head, or ears; or (11) beat the child with an implement (hit over and over as hard as one could). These 11 items were adapted from the Parent-Child Conflict Tactics Scale (Straus, Hamby, Finkelhor, Moore, & Runyan, 1998) and the WorldSAFE survey questionnaire (Sadowski, Hunter, Bangdiwala, & Munoz, 2004). A twelfth item asked whether the caregiver believed that to bring up/raise/educate the target child properly, it is necessary to punish him or her physically; *don't know/no opinion* responses for this item were treated as missing. Each item was coded as 0 = *no* or 1 = *yes*.

We constructed four discipline indicators following the recommendations of UNICEF (2006) for these items. The nonviolence indicator reflected the percentage of children whose caregivers explained why something was wrong, gave the child something else to do, or took away privileges. The psychological aggression indicator reflected the percentage of children whose caregivers yelled at the child or called the child a name. The physical violence indicator reflected the percentage of children who were spanked with a hand, hit on the extremities, shaken, or hit with an object. The severe physical violence indicator reflected the percentage of children who were hit on the head or who were beaten with an implement. We recognize that views about the severity of specific forms of violence likely vary across countries and therefore caution that our findings should be interpreted with this caveat in mind.

Aims and Analytic Plan

The main aim of this chapter is to describe the contemporary situations of multiple domains of early child development across 14 developing African countries. To do so, we analyzed how these countries vary with respect to indicators of child growth, household resources, caregiving, and discipline and violence. We used a deviation contrast to compare each country to the grand mean or overall effect of all 14 African countries in the set instead of to a single comparison group because we were not interested in specific country contrasts so much as the general ordering of these sub-Saharan African countries among one another on a continuum. The grand mean or overall effect serves as a midpoint for determining which countries are performing better and worse than average, and so we discuss differences from them and not norms (except for growth, which also had norming data). The grand mean or overall effect was also based on weighted statistics, meaning that each country was weighted equally, instead of countries with larger samples weighting the sample more than countries with smaller samples.

For all tests we report the significance level and a measure of effect size. Sample sizes are so large that even very small effects are statistically significant. In this light, focus on the effect sizes is more meaningful than significances. We report effect sizes for the country deviations from the grand mean (analogous to Cohen's *d*; Cohen, 1988) and from the overall effect (odds ratios, *ORs*). We interpret the size of effects for continuous dependent variables corresponding to Cohen's benchmarks for small (0.20), medium (0.50), and large (0.80) *ds*, and they can be interpreted in terms of standard deviations from the grand mean. For example, an effect size of 1.5 means that the mean for that country was 1.5 *SD* above the grand mean. The effect sizes for dichotomous dependent variables can be interpreted in terms of their odds of occurrence. For example, an *OR* of 3.5 means that the odds of caregivers in that country engaging in the target practice are 3.5 times the odds of caregivers in an average hypothetical country (i.e., the overall effect of country) engaging in the target practice.

Statistics for individual indicators are tabled, but for parsimony and illustration, we identify the three countries with the highest and lowest scores. After each section of results, we then look across related indicators to discern which countries score consistently above and below the average or overall effect in that domain.

Main Findings from the Study of 14 Sub-Saharan African Countries

Child Growth

Overall, children in the African countries in our sample were at least 1 *SD* below average height-for-age and weight-for-age (Table 2.2). Height-for-age and weight-for-age shared 26% of their variance. More than one-quarter of the children under five were stunted, and more than 10% were underweight in every country. Stunting and underweight shared 13% of their variance.

Children in Djibouti, the Gambia, and Ghana had the highest average height-for-age, and children in Guinea-Bissau, Sierra Leone, and Mozambique had the lowest average height-for-age. Djibouti, the Gambia, and Ghana also had the lowest percentages of stunted children, and Guinea-Bissau, Sierra Leone, and the Central African Republic had the highest percentages of stunted children. Looking across height-for-age and stunting, Cameroon, Djibouti, the Gambia, Ghana, and Togo had higher than average height-for-age and lower percentages of children with stunting. Burkina Faso, Central African Republic, Côte D'Ivoire, Guinea-Bissau, and Sierra Leone had lower than average height-for-age and relatively higher percentages of children with stunting.

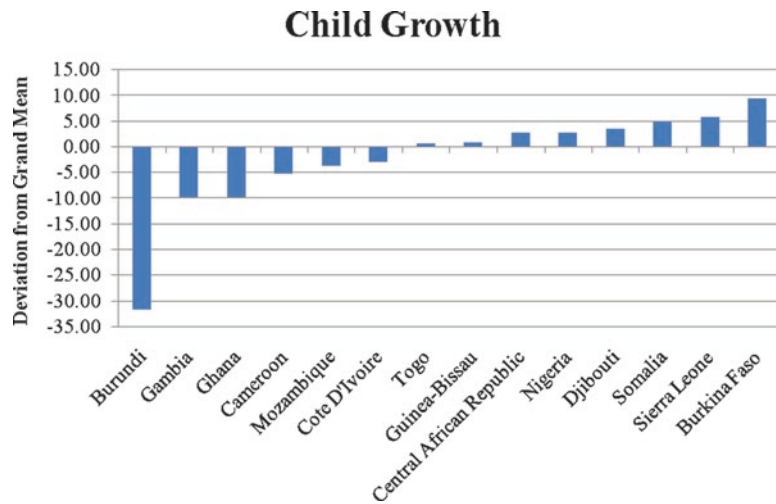
Children in Cameroon, Côte D'Ivoire, and Guinea-Bissau had the highest average weight-for-age, and children in Burkina Faso, Somalia, and Togo had the lowest average weight-for-age. Ghana, Cameroon, and Mozambique had the lowest percentages of underweight children, and Burkina Faso, Djibouti, and Somalia had the highest percentages of underweight children. Looking across weight-for-age and the percentage underweight,

Table 2.2 Average height-for-age and weight-for-age and percentages of children who were stunted and underweight by country

	Height-for-age			Stunted		Weight-for-age			Underweight	
	<i>M</i>	<i>SD</i>	<i>d</i>	%	<i>OR</i>	<i>M</i>	<i>SD</i>	<i>d</i>	%	<i>OR</i>
Burkina Faso	-1.66	1.87	-0.78	43.57	1.20	-1.55	1.65	-2.03	38.72	2.12
Burundi	–	–	–	–	–	–	–	–	–	–
Cameroon	-1.36	1.82	0.41	37.12	0.92	-0.62	1.43	1.73	15.72	0.63
Central African Republic	-1.56	2.10	-0.38	43.27	1.18	-1.06	1.56	-0.05, ns	25.68	1.16
Côte D’Ivoire	-1.53	1.88	-0.26	40.55	1.06	-0.86	1.31	0.76	16.89	0.68
Djibouti	-.91	2.70	2.20	35.81	0.86	-1.18	2.03	-0.53	34.65	1.78
Gambia	-1.18	1.55	1.13	27.99	0.60	-.89	1.20	0.64	15.94	0.64
Ghana	-1.25	1.50	0.85	29.65	0.65	-0.89	1.17	0.64	14.31	0.56
Guinea-Bissau	-1.79	2.07	-1.29	48.06	1.43	-0.88	1.36	0.68	16.93	0.68
Mozambique	-1.69	1.41	-0.90	40.29	1.05, ns	-0.92	1.15	0.52	15.89	0.63
Nigeria	-1.47	2.39	-0.02, ns	42.57	1.15	-0.97	1.88	0.31	26.46	1.21
Sierra Leone	-1.77	1.96	-1.21	47.07	1.38	-1.23	1.50	-0.74	27.96	1.30
Somalia	-1.51	2.05	-0.18	40.34	1.05, ns	-1.30	1.57	-1.02	32.82	1.64
Togo	-1.35	1.85	0.45	35.84	0.87	-1.27	1.48	-0.90	28.84	1.36
Total	-1.46	2.23		39.39		-1.05	1.71		23.91	

Note: – = item was not asked in the country. Odds ratios are significant at $p \leq 0.05$ unless otherwise noted (ns). Children were considered to be stunted if they scored more than 2 *SD* below the standardized mean of 0 on height-for-age, and children were considered to be underweight if they scored more than 2 *SD* below the standardized mean of 0 on weight-for-age

Fig. 2.2 Ordering of sub-Saharan African countries on indicators for child growth



Cameroon, Côte D’Ivoire, the Gambia, Ghana, Guinea-Bissau, and Mozambique had higher than average weight-for-age and lower percentages of underweight children. Burkina Faso, Djibouti, Sierra Leone, Somalia, and Togo had lower than

average weight-for-age and relatively higher percentages of underweight children.

Figure 2.2 shows the ordering for the countries on indicators of child growth. Scores were calculated by averaging the difference from the

grand mean in each country for the percentages of children who were stunted and underweight.

Household Resources

Quality of Housing

Overall, more than one-half of families lived with improved drinking water, fewer than one-half improved sanitation and finished flooring, and fewer than 15% closed cooking facilities or refrigeration (Table 2.3). Among the 14 African countries, Djibouti, the Gambia, and Ghana had the highest percentages of families with improved drinking water, and Sierra Leone, Nigeria, and Somalia had the lowest percentages of families with improved drinking water. The Gambia, Guinea-Bissau, and Djibouti had the highest percentages of families with improved sanitation, and Burkina Faso, Togo, and Sierra Leone had the lowest percentages of families with improved sanitation. Côte D'Ivoire, Togo, and Ghana had the highest per-

centages of finished flooring, and Burundi, Central African Republic, and Guinea-Bissau had the lowest percentages of finished flooring. Djibouti, Guinea-Bissau, and Côte D'Ivoire had the highest percentages of families with closed cooking facilities, and Somalia, Burundi, and Central African Republic had the lowest percentages of families with closed cooking facilities. Finally, Djibouti, the Gambia, and Ghana had the highest percentages of families with refrigeration, and Somalia, Central African Republic, and Burundi had the lowest percentages of families with refrigeration. Taking into consideration all quality of housing indicators individually, all indicators had ORs above 1.0 in Côte D'Ivoire, Djibouti, the Gambia, and Ghana, indicating that they had a greater representation of families with good quality housing, and Burundi, Sierra Leone, and Somalia had ORs at or below 1.0 indicating that they had a lower representation of families with good quality housing.

Table 2.3 Percentage of households with each quality of housing by country

	Improved/piped water		Improved sanitation		Finished flooring		Cooking (closed stove)		Refrigerator	
	%	OR	%	OR	%	OR	%	OR	%	OR
Burkina Faso	74.9	1.57	1.1	0.02	34.8	0.69	1.3	0.36	3.3	0.49
Burundi	66.0	1.02, ns	32.1	0.78	10.5	0.15	0.3	0.09	2.0	0.30
Cameroon	61.2	0.83	28.9	0.67	44.8	1.04, ns	10.3	3.06	9.5	1.53
Central African Republic	61.6	0.84	50.3	1.67	11.4	0.17	0.4	0.10	1.9	0.28
Côte D'Ivoire	73.5	1.46	55.7	2.08	79.0	4.83	16.6	5.30	11.0	1.80
Djibouti	89.7	4.59	60.9	2.57	59.4	1.89	64.8	48.91	31.0	6.54
Gambia	87.0	3.53	82.0	7.52	71.4	3.21	16.0	5.09	16.4	2.86
Ghana	77.4	1.79	47.2	1.47	73.0	3.47	6.7	1.91	14.8	2.52
Guinea-Bissau	57.7	0.72	66.5	3.28	27.9	0.50	48.2	24.75	6.1	0.95, ns
Mozambique	48.6	0.50	–	–	32.1	0.61	3.1	0.85	11.5	1.90
Nigeria	44.8	0.43	36.6	0.95	53.4	1.48	2.5	0.69	12.2	2.03
Sierra Leone	42.7	0.39	28.0	0.64	28.2	0.51	0.4	0.11	3.0	0.44
Somalia	48.4	0.49	36.3	0.94, ns	32.4	0.62	0.1	0.03	1.4	0.21
Togo	57.7	0.72	24.9	0.55	75.8	4.03	2.8	0.78	3.7	0.55
Total	63.7		42.3		45.3		12.4		9.1	

Note: Odds ratios were significant at $p \leq 0.05$ unless otherwise noted (ns). – = item was not asked in the country

Table 2.4 Percentage of households with each material resource by country

	Radio		TV		Telephone		Transportation		Electricity	
	%	OR	%	OR	%	OR	%	OR	%	OR
Burkina Faso	74.0	1.53	11.7	0.68	11.6	0.59	54.7	7.36	8.1	0.33
Burundi	43.1	0.41	3.4	0.18	5.4	0.26	1.5	0.09	6.9	0.28
Cameroon	64.7	0.99, ns	28.6	2.06	29.8	1.92	16.6	1.22	42.9	2.82
Central African Republic	52.6	0.60	3.7	0.20	5.7	0.27	6.4	0.42	6.2	0.25
Côte D'Ivoire	71.7	1.36	41.0	3.57	32.5	2.18	24.2	1.95	57.6	5.09
Djibouti	53.0	0.61	45.9	4.35	34.4	2.37	8.8	0.59	54.5	4.49
Gambia	90.1	4.90	37.9	3.14	57.3	6.06	45.0	5.00	22.1	1.07, ns
Ghana	74.8	1.60	26.1	1.81	22.8	1.34	13.6	0.96, ns	38.5	2.36
Guinea-Bissau	76.1	1.71	11.6	0.68	20.8	1.19	14.8	1.06, ns	11.6	0.49
Mozambique	59.3	0.78	21.3	1.39	36.8	2.63	8.0	0.53	19.3	0.90
Nigeria	74.6	1.58	28.5	2.05	25.9	1.58	33.5	3.08	39.3	2.43
Sierra Leone	42.0	0.39	4.6	0.25	1.7	0.08	3.3	0.21	8.0	0.33
Somalia	35.5	0.30	6.6	0.36	14.5	0.77	11.3	0.78	15.4	0.68
Togo	76.3	1.73	20.3	1.31	18.2	1.01, ns	23.5	1.88	23.2	1.13
Total	63.4		20.8		22.7		18.9		25.3	

Note: Odds ratios were significant at $p \leq 0.05$ unless otherwise noted (ns)

Material Resources

Overall, more than one-half of families had a radio, but one-quarter or fewer had a TV, telephone, access to transportation, or electricity in the household (Table 2.4). Among the 14 African countries, the Gambia, Togo, and Ghana had the highest percentages of households with a radio, and Somalia, Sierra Leone, and Burundi had the lowest percentages of households with a radio. Djibouti, Côte D'Ivoire, and the Gambia had the highest percentages of households with a TV, and Burundi, Burkina Faso, and Sierra Leone had the lowest percentages of households with a TV. The Gambia, Mozambique, and Djibouti had the highest percentages of households with a wired or mobile telephone, and Sierra Leone, Burundi, and Central African Republic had the lowest percentages of households with a wired or mobile telephone. Burkina Faso, the Gambia, and Nigeria had the highest percentages of households with nonhuman-powered transportation, and Burundi, Sierra Leone, and Central African Republic had the lowest percentages of households with transportation. Côte D'Ivoire,

Djibouti, and Cameroon had the highest percentages of households with electricity, and Central African Republic, Burundi, and Sierra Leone had the lowest percentages of households with electricity. Taking into consideration all material resources, ORs were at or above 1.0 on all indicators in Cameroon, Côte D'Ivoire, the Gambia, Ghana, Nigeria, and Togo, indicating that they had an average or greater representation of families with material resources in the household. Burundi, Central African Republic, Sierra Leone, and Somalia had ORs below 1.0, indicating that they had below average representation of families with material resources in the household.

Formal Learning Resources

Overall, fewer than one-half of families had adult books, children's books, or store-bought toys (Table 2.5). Mozambique, Cameroon, and Ghana had the highest percentages of households with adult books, and Djibouti, Togo, and Central African Republic had the lowest percentages of households with adult books. Ghana, Nigeria, and Sierra Leone had the highest percentages of house-

Table 2.5 Percentage of households with each formal learning resource and informal learning resource by country

	Formal learning resources						Informal learning resources					
	≥1 Adult book		≥1 Children's book		Store-bought toys		Household objects		Outside objects		Homemade toys	
	%	OR	%	OR	%	OR	%	OR	%	OR	%	OR
Burkina Faso	–	–	–	–	–	–	–	–	–	–	–	–
Burundi	–	–	–	–	–	–	–	–	–	–	–	–
Cameroon	59.3	2.12	15.0	1.12	34.2	1.26	49.6	1.19	48.9	1.08	27.8	0.83
Central African Republic	32.6	0.70	10.9	0.77	20.0	0.60	50.9	1.25	50.7	1.17	34.2	1.12
Côte D'Ivoire	37.5	0.87	7.3	0.50	31.2	1.09	37.4	0.72	39.0	0.72	32.5	1.04, ns
Djibouti	25.8	0.51	18.5	1.43	28.9	0.98, ns	22.3	0.35	22.5	0.33	19.8	0.53
Gambia	–	–	–	–	38.4	1.50	52.0	1.31	46.5	0.99, ns	36.5	1.24
Ghana	43.1	1.10	21.6	1.74	31.1	1.09	55.3	1.50	58.1	1.57	33.2	1.07, ns
Guinea-Bissau	–	–	–	–	–	–	–	–	–	–	–	–
Mozambique	68.5	3.16	7.5	0.51	–	–	–	–	–	–	–	–
Nigeria	37.2	0.86	20.7	1.65	16.7	0.48	32.9	0.59	40.2	0.76	30.0	0.92
Sierra Leone	36.0	0.82	19.0	1.48	38.7	1.52	77.2	4.09	70.9	2.77	49.7	2.13
Somalia	–	–	–	–	–	–	–	–	–	–	–	–
Togo	29.9	0.62	10.7	0.76	29.8	1.02, ns	31.8	0.56	47.4	1.02, ns	26.0	0.76
Total	41.1		14.6		29.9		45.5		47.1		32.2	

Note: Odds ratios were significant at $p \leq 0.05$ unless otherwise noted (ns). – = item was not asked in the country

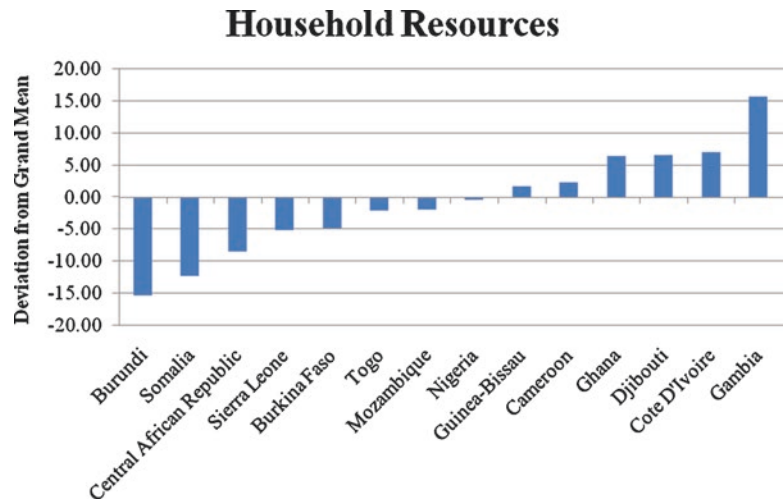
holds with children's books, and Mozambique, Togo, and Central African Republic had the lowest percentages of households with children's books. Sierra Leone, the Gambia, and Cameroon had the highest percentages of households with store-bought toys, and Nigeria, Central African Republic, and Djibouti had the lowest percentages of households with store-bought toys. Taking into consideration all formal learning resources, ORs were above 1.0 on all indicators in Cameroon and Ghana, indicating that they had greater representations of families with formal learning resources, and ORs were at or below 1.0 in Central African Republic and Togo, indicating that they had average or lower representations of families with formal learning resources.

Informal Learning Resources

Overall, fewer than one-half of children used household objects, outside objects, and homemade toys for play (Table 2.5). Sierra Leone,

Ghana, and the Gambia had the highest percentages of children who used household objects for play, and Djibouti, Togo, and Nigeria had the lowest percentages of children who used household objects for play. Sierra Leone, Ghana, and Central African Republic had the highest percentages of children who used outside objects for play, and Djibouti, Côte D'Ivoire, and Nigeria had the lowest percentages of children who used outside objects for play. Finally, Sierra Leone, the Gambia, and Central African Republic had the highest percentages of children who used homemade toys for play, and Djibouti, Togo, and Cameroon had the lowest percentages of children who used homemade toys for play. Taking into consideration all informal learning resources, ORs were at or above 1.0 on all indicators in Central African Republic, the Gambia, Ghana, and Sierra Leone, indicating an average or greater representation of families with informal learning resources, and ORs were at or below 1.0 in Côte

Fig. 2.3 Ordering of sub-Saharan African countries on indicators for household resources



D'Ivoire, Djibouti, Nigeria, and Togo, indicating an average or lower representation of families with informal learning resources.

Figure 2.3 shows the ordering for the countries on indicators of household resources. Scores were calculated by averaging the difference from the grand mean in all categories under quality of housing, material resources, and formal and informal learning resources.

Caregiving

Read Books Overall, fewer than 10% of mothers, fathers, and other people had read to the child in the past 3 days (Table 2.6). Nigeria, Somalia, and Ghana had the highest percentages of mothers who read to their children, and Burkina Faso, Côte D'Ivoire, and Mozambique had the lowest percentages of mothers who read to children. Nigeria, Somalia, and Sierra Leone had the highest percentages of fathers who read to their children, and Burkina Faso, Côte D'Ivoire, and Mozambique had the lowest percentages of fathers who read to their children. The Gambia, Nigeria, and Mozambique had the highest percentages of other people who read to the children, and Burkina Faso, Côte D'Ivoire, and Guinea-Bissau had the lowest percentages of other people who read to the children. Taking into consideration all caregivers individually, all ORs were at or above 1.0 in Djibouti,

Ghana, Nigeria, and Sierra Leone, indicating an average or greater representation of mothers, fathers, and other people who read to children, and ORs were below 1.0 in Burkina Faso, Côte D'Ivoire, and Guinea-Bissau, indicating a lower representation of mothers, fathers, and other people who read to children.

Tell Stories Overall, fewer than 20% of mothers, fathers, and other people had told the child stories in the past 3 days (Table 2.6). Somalia, Nigeria, and Cameroon had the highest percentages of mothers who told their children stories, and Burkina Faso, Guinea-Bissau, and Mozambique had the lowest percentages of mothers who told their children stories. Somalia, Nigeria, and Central African Republic had the highest percentages of fathers who told their children stories, and Burkina Faso, the Gambia, and Djibouti had the lowest percentages of fathers who told their children stories. Guinea-Bissau, the Gambia, and Somalia had the highest percentages of other people who told the children stories, and Burkina Faso, Côte D'Ivoire, and Djibouti had the lowest percentages of other people who told the children stories. Taking into consideration all caregivers individually, ORs were at or above 1.0 in Central African Republic, Nigeria, Sierra Leone, and Somalia, indicating an average or greater representation of mothers, fathers, and other people who told children stories, and ORs were at or

Table 2.6 Percentage of mothers, fathers, and others who read books and told stories to children

	Read books						Told stories					
	Mother		Father		Other		Mother		Father		Other	
	%	OR	%	OR	%	OR	%	OR	%	OR	%	OR
Burkina Faso	0.84	0.23	0.41	0.18	1.68	0.24	2.71	0.19	0.89	0.16	3.79	0.22
Burundi	–	–	–	–	–	–	–	–	–	–	–	–
Cameroon	4.79	1.35	1.58	0.72	5.23	0.79	21.14	1.78	6.59	1.23	13.79	0.90
Central African Republic	3.83	1.07, ns	3.44	1.59	6.43	0.98, ns	13.58	1.04, ns	9.18	1.76	16.14	1.09
Côte D'Ivoire	1.45	0.39	0.99	0.45	3.59	0.53	10.64	0.79	3.90	0.71	6.13	0.37
Djibouti	4.84	1.36	3.49	1.61	6.00	0.91, ns	14.14	1.09, ns	3.74	0.68	6.65	0.40
Gambia	3.52	0.98, ns	1.92	0.88, ns	22.20	4.06	10.95	0.82	2.25	0.40	27.89	2.18
Ghana	5.67	1.61	3.68	1.71	9.70	1.53	14.73	1.15	5.67	1.05, ns	12.89	0.83
Guinea-Bissau	2.43	0.67	1.61	0.73	4.10	0.61	2.85	0.20	6.91	1.29	49.02	5.42
Mozambique	2.32	0.64	1.55	0.70	10.74	1.71	10.39	0.77	4.64	0.85	21.37	1.53
Nigeria	13.52	4.19	5.17	2.43	13.11	2.15	27.07	2.47	8.39	1.59	21.53	1.55
Sierra Leone	4.72	1.33	3.76	1.74	10.05	1.59	18.27	1.49	10.78	2.10	19.05	1.33
Somalia	5.70	1.62	3.88	1.80	4.44	0.66	49.09	6.41	19.03	4.09	21.78	1.57
Togo	3.44	0.95, ns	2.49	1.14, ns	5.14	0.77	13.25	1.02, ns	5.43	1.00, ns	10.16	0.64
Total	4.39		2.61		7.88		16.06		6.72		17.71	

Note: Odds ratios were significant at $p \leq 0.05$ unless otherwise noted (ns). – = item was not asked in the country

below 1.0 in Burkina Faso, Côte D'Ivoire, Djibouti, and Togo, indicating an average or lower representation of mothers, fathers, and other people who told children stories.

Name, Count, Draw Overall, fewer than 35% of mothers, fathers, and other people named, counted, and drew with children in the past 3 days (Table 2.7). Somalia, Sierra Leone, and Nigeria had the highest percentages of mothers who named, counted, and drew with their children, and Mozambique, Djibouti, and Burkina Faso had the lowest percentages of mothers who named, counted, and drew with their children. Sierra Leone, Central African Republic, and Somalia had the highest percentages of fathers who named, counted, and drew with their children, and Mozambique, Burkina Faso, and Djibouti had the lowest percentages of fathers who named, counted, and drew with their children. Sierra Leone, Central African Republic, and the Gambia had the highest percentages of other people who named, counted, and drew with the children, and Djibouti, Burkina Faso, and Togo had the lowest percentages of other people who named, counted, and drew with the children. Taking into consideration all caregivers individually, ORs were at or above 1.0 in Cameroon, Central African Republic, Côte D'Ivoire, Sierra Leone, and Somalia, indicating an average or greater representation of mothers, fathers, and other people who named, counted, and drew with children, and ORs were at or below 1.0 in Burkina Faso, Djibouti, Ghana, Guinea-Bissau, Mozambique, and Togo, indicating an average or lower representation of mothers, fathers, and other people who had named, counted, and drew with children.

Sing Songs Overall, fewer than one-half of mothers and other people sang songs to the children in the past 3 days, and fewer than 15% of fathers sang songs (Table 2.7). Sierra Leone, Somalia, and Togo had the highest percentages of mothers who sang songs to their children, and Djibouti, Burkina Faso, and Mozambique had the lowest percentages of mothers who sang songs to their children. Sierra Leone, Togo, and Ghana had the highest percentages of

fathers who sang songs to their children, and Djibouti, Burkina Faso, and Mozambique had the lowest percentages of fathers who sang songs to their children. Sierra Leone, the Gambia, and Central African Republic had the highest percentages of other people who sang songs to the children, and Djibouti, Burkina Faso, and Somalia had the lowest percentages of other people who sang songs to the children. Taking into consideration all caregivers individually, ORs were at or above 1.0 in Cameroon, Central African Republic, Côte D'Ivoire, Ghana, Nigeria, Sierra Leone, and Togo, indicating average or greater representation of mothers, fathers, and other people who sang to children, and ORs were below 1.0 in Burkina Faso, Djibouti, and Guinea-Bissau, indicating lower representation of mothers, fathers, and other people who sang to children.

Take Outside Overall, fewer than one-half of mothers, fathers, and other people took the child outside the yard, compound, or enclosure in the last 3 days (Table 2.8). Sierra Leone, Côte D'Ivoire, and Ghana had the highest percentages of mothers who took their children outside, and Guinea-Bissau, Djibouti, and Mozambique had the lowest percentages of mothers who took their children outside. Sierra Leone, Ghana, and Somalia had the highest percentages of fathers who took their children outside, and Mozambique, Burkina Faso, and Djibouti had the lowest percentages of fathers who took their children outside. The Gambia, Sierra Leone, and Côte D'Ivoire had the highest percentages of other people who took the children outside, and Djibouti, Mozambique, and Guinea-Bissau had the lowest percentages of other people who took the children outside. Taking into consideration all caregivers individually, ORs were above 1.0 in Cameroon, Côte D'Ivoire, Ghana, Sierra Leone, and Togo, indicating above-average representation of mothers, fathers, and other people who took children outside, and ORs were below 1.0 in Djibouti and Mozambique, indicating below-average representation of mothers, fathers, and other people who took children outside.

Table 2.7 Percentage of mothers, fathers, and others who named, counted, and drew and sang songs with children

	Named, counted, drew						Sang songs					
	Mother		Father		Other		Mother		Father		Other	
	%	OR	%	OR	%	OR	%	OR	%	OR	%	OR
Burkina Faso	18.88	0.49	5.95	0.56	9.93	0.41	18.88	0.27	2.66	0.29	11.68	0.32
Burundi	—	—	—	—	—	—	—	—	—	—	—	—
Cameroon	35.08	1.14	11.58	1.15	21.45	1.01, ns	61.20	1.86	13.52	1.68	34.52	1.28
Central African Republic	42.30	1.55	19.09	2.07	36.68	2.14	48.20	1.10	16.72	2.15	44.28	1.93
Côte D'Ivoire	39.28	1.36	14.02	1.43	27.35	1.39	54.57	1.42	10.91	1.31	28.75	.98, ns
Djibouti	11.23	0.27	6.07	0.57	7.55	0.30	17.24	0.25	2.19	0.24	5.75	0.15
Gambia	26.24	0.75	9.41	0.91, ns	31.43	1.69	27.35	0.44	3.50	0.39	51.67	2.60
Ghana	24.31	0.68	10.15	0.99, ns	19.80	0.91	58.40	1.65	17.70	2.31	37.77	1.47
Guinea-Bissau	19.92	0.53	7.08	0.67	19.17	0.88	39.63	0.77	4.57	0.51	23.74	0.76
Mozambique	8.89	0.21	2.69	0.24	20.99	0.98, ns	19.14	0.28	2.93	0.32	37.15	1.44
Nigeria	49.42	2.06	9.03	0.87	23.98	1.17	52.97	1.33	9.50	1.13	29.73	1.03, ns
Sierra Leone	56.88	2.78	31.61	4.06	42.25	2.70	74.45	3.43	33.56	5.42	54.93	2.96
Somalia	86.79	13.85	16.11	1.69	23.45	1.13	69.88	2.73	11.13	1.34	19.00	0.57
Togo	25.69	0.73	10.60	1.04, ns	13.44	0.57	68.92	2.61	18.55	2.44	33.23	1.21
Total	34.22		11.80		22.88		46.99		11.34		31.71	

Note: Odds ratios were significant at $p \leq 0.05$ unless otherwise noted (ns). — = item was not asked in the country

Table 2.8 Percentage of mothers, fathers, and others who took their children outside and played with them

	Took outside						Played					
	Mother		Father		Other		Mother		Father		Other	
	%	OR	%	OR	%	OR	%	OR	%	OR	%	OR
Burkina Faso	57.56	1.52	9.02	0.45	24.69	0.69	41.63	0.74	11.40	0.61	37.33	0.60
Burundi	–	–	–	–	–	–	–	–	–	–	–	–
Cameroon	60.33	1.71	19.38	1.10	37.24	1.25	68.91	2.30	25.70	1.63	52.63	1.12
Central African Republic	44.90	0.92	19.59	1.11	41.30	1.48	36.32	0.59	20.07	1.19	54.16	1.19
Côte D'Ivoire	73.30	3.09	24.09	1.45	50.19	2.12	65.98	2.01	25.93	1.65	59.93	1.51
Djibouti	11.81	0.15	10.33	0.53	7.30	0.17	10.46	0.12	5.29	0.26	12.46	0.14
Gambia	53.36	1.29	12.29	0.64	54.38	2.51	30.86	0.46	8.47	0.44	72.94	2.72
Ghana	65.80	2.16	30.97	2.05	42.35	1.55	70.31	2.46	31.38	2.16	57.16	1.35
Guinea-Bissau	7.94	0.10	21.91	1.28	19.84	0.52	41.33	0.73	13.28	0.72	37.56	0.61
Mozambique	26.12	0.40	4.45	0.21	14.27	0.35	19.11	0.25	4.73	0.23	56.94	1.34
Nigeria	45.87	0.95	19.60	1.11	41.52	1.50	52.36	1.14	16.94	0.96, ns	52.33	1.11
Sierra Leone	77.88	3.96	43.59	3.53	52.23	2.30	85.25	5.99	55.10	5.79	71.35	2.52
Somalia	51.12	1.18	24.57	1.49	27.56	0.80	64.69	1.90	21.33	1.28	39.77	0.67
Togo	62.80	1.90	19.79	1.13	35.09	1.14	59.99	1.55	26.63	1.71	50.49	1.03, ns
Total	49.14		19.97		34.46		49.78		20.48		50.39	

Note: Odds ratios were significant at $p \leq 0.05$ unless otherwise noted (ns). – = item was not asked in the country

Play About one-half of mothers and other people played with children in the past 3 days, but fewer than 20% of fathers played (Table 2.8). Sierra Leone, Ghana, and Cameroon had the highest percentages of mothers who played with their children, and Djibouti, Mozambique, and the Gambia had the lowest percentages of mothers who played with their children. Sierra Leone, Ghana, and Togo had the highest percentages of fathers who played with their children, and Mozambique, Djibouti, and the Gambia had the lowest percentages of fathers who played with their children. The Gambia, Sierra Leone, and Côte D’Ivoire had the highest percentages of other people who played with the children, and Djibouti, Burkina Faso, and Guinea-Bissau had the lowest percentages of other people who played with the children. Taking into consideration all caregivers individually, ORs were at or above 1.0 in Cameroon, Côte D’Ivoire, Ghana, Nigeria, Sierra Leone, and Togo, indicating average or greater representation of mothers, fathers, and other people who played with children, and ORs were below 1.0 in Burkina Faso, Djibouti, and Guinea Bissau, indicating below-average representation of mothers, fathers, and other people who played with children.

Figure 2.4 shows the ordering for the countries on indicators of caregiving. Scores were calculated by averaging the difference from the

grand mean for reading books, telling stories, naming, counting, and drawing, singing songs, taking a child outside, and playing.

Discipline and Violence

Overall, over 70% of children in the 14 African countries had experienced nonviolent discipline (explaining why something was wrong, removing privileges) and psychological aggression (yelling, name-calling), over 65% had experienced physical punishment (spanking, shaking), and over 15% had experienced severe physical punishment (being hit on the head or beaten with an implement). Furthermore, across countries, over 35% of caregivers believed that to bring up/raise/educate the child properly, it is necessary to punish him or her physically (Table 2.9). Guinea-Bissau, the Gambia, and Central African Republic had the highest percentages of children receiving nonviolent discipline, and Cameroon, Burkina Faso, and Ghana had the lowest percentages of children receiving nonviolent discipline. Djibouti, Guinea-Bissau, and the Gambia had the lowest percentages of children receiving psychological aggression, and Côte D’Ivoire, Cameroon, and Burkina Faso had the highest percentages of children receiving psychological aggression. Djibouti, Burkina Faso, and Guinea-Bissau had the lowest percentages of children receiving physical punish-

Fig. 2.4 Ordering sub-Saharan African countries on indicators for caregiving

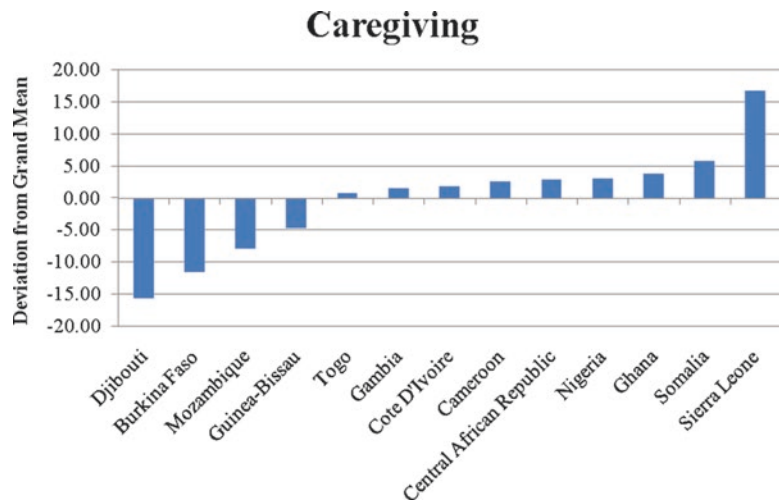


Table 2.9 Percentage of families who engage in different discipline strategies and violence

	Nonviolent		Psychological aggression		Physical punishment		Severe physical punishment		Need to physically punish	
	%	OR	%	OR	%	OR	%	OR	%	OR
Burkina Faso	74.36	0.74	78.78	1.36	58.58	0.63	16.94	0.93, ns	40.36	1.23
Burundi	–	–	–	–	–	–	–	–	–	–
Cameroon	71.12	0.62	83.40	1.84	79.42	1.72	22.42	1.31	42.11	1.32
Central African Republic	83.47	1.28	78.12	1.31	73.91	1.26	28.91	1.85	24.43	0.59
Côte D'Ivoire	82.40	1.19	83.75	1.89	73.31	1.22	17.21	0.94, ns	38.20	1.12
Djibouti	74.69	0.75	41.34	0.26	55.58	0.56	19.14	1.08, ns	32.90	0.89, ns
Gambia	85.12	1.45	68.83	0.81	72.05	1.15, ns	16.96	0.93, ns	30.78	0.81
Ghana	74.68	0.75	76.78	1.21	71.47	1.11, ns	6.15	0.30	45.70	1.53
Guinea-Bissau	87.86	1.83	56.47	0.48	62.92	0.75	19.66	1.11, ns	20.95	0.48
Mozambique	–	–	–	–	–	–	–	–	–	–
Nigeria	–	–	–	–	–	–	–	–	–	–
Sierra Leone	82.29	1.18	77.04	1.23	71.32	1.11, ns	19.78	1.12, ns	55.22	2.24
Somalia	–	–	–	–	–	–	–	–	–	–
Togo	76.38	0.82	74.65	1.08, ns	69.59	1.02, ns	21.92	1.28	30.48	0.80
Total	79.24		71.92		68.82		18.91		36.11	

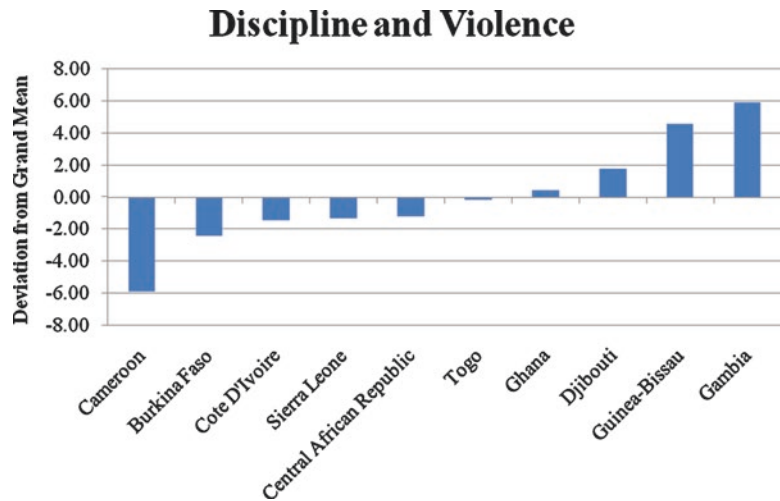
Note: Odds ratios were significant at $p \leq 0.05$ unless otherwise noted (ns). – = item was not asked in the country

ment, and Cameroon, Central African Republic, and Côte D'Ivoire had the highest percentages of children receiving physical punishment. Ghana, Burkina Faso, and the Gambia had the lowest percentages of children receiving severe physical punishment, and Central African Republic, Cameroon, and Togo had the highest percentages of children receiving severe physical punishment. Finally, Guinea-Bissau, Central African Republic, and Togo had the lowest percentages of caregivers who believed that to bring up/raise/educate their child properly, it is necessary to punish him or her physically, and Sierra Leone, Ghana, and Cameroon had the highest percentages of caregivers who believed that to bring up/raise/educate the target child properly, it is necessary to punish him or her physically. Taking into consideration all discipline strategies individually, the Gambia and Guinea-Bissau had relatively high percentages of

children receiving nonviolent discipline and relatively low percentages receiving psychological aggression, physical punishment, and severe physical punishment. Cameroon and Togo had relatively low percentages of children receiving nonviolent discipline and relatively high percentages receiving psychological aggression, physical punishment, and severe physical punishment.

Figure 2.5 shows the ordering for countries on indicators of discipline and violence. Scores were calculated by averaging the difference from the grand mean in all categories under discipline and violence. In calculating the score, every category that was considered to have a positive effect (i.e., nonviolence) was counted positively and those considered to have negative effects (i.e., psychological aggression, physical punishment, severe physical punishment, and the need to punish physically) were reverse coded.

Fig. 2.5 Ordering of sub-Saharan African countries on indicators for discipline and violence



Some Overall Reflections

Most of what is known about children's experiences and child development comes from studies in the developed world where the minority of the planet's young children reside. Clearly, more research is needed to describe the experiences and development of children in the majority of the developing world generally and sub-Saharan Africa specifically.

In this chapter we focused on household conditions and caregiving behaviors considered important for the well-being of children in sub-Saharan Africa. As can be expected, given the range in socioeconomic and emergency situations across the sampled countries, we found remarkable variability in children's home environments. For very young children, lack of access to clean water and facilities for sanitation is a frequently cited risk (Bartlett, 2005); for older children and parents, not having a safe means of cooking can be a major detriment to good health (WHO & UNICEF, 2009). Disease and mortality patterns in sub-Saharan Africa shifted toward the end of the twentieth century (Jamison et al., 2006). Our findings pertaining to weight-for-age (and underweight) were similar to our findings pertaining to height-for-age (and stunting). That overall pattern is not surprising in that being underweight also tends to reflect multiplicative effects of poor nutrition and poor health circumstances (Ricci & Becker, 1996). One

of the fastest growing areas of interventions to improve growth and nutritional status focuses on water and sanitation. Overall, about two-thirds of households in our sample had improved drinking water, and approximately one-half of households had improved toilet and conditions linked to hygiene and sanitation. Only one-third of the households had finished flooring in the home, and only 12% had a closed stove for cooking and 9% refrigeration. With the exception of a radio, one-quarter or fewer households had material resources (TV, telephone, transportation, or electricity). Fewer than one-half of households had any children's books, store-bought toys, or homemade toys; notably, only two countries had as many as 20% of households with children's books.

These findings on poor housing conditions and limited access to learning resources have clear implications for parents, practitioners, and policy-makers. As countries are able to improve infrastructure pertaining to water, sanitation, and health care, severe malnutrition in childhood subsides (Pelletier, 1994). Living in poorly constructed homes with inadequate facilities for drinking, cooking, toileting, and learning poses direct threats to children's health and competence, and renders the tasks of parenting more difficult. Parents themselves are likely to be more stressed and less healthy (e.g., maternal depression is recognized as a major risk factor for poor growth in children who reside in developing countries;

Rahman, Patel, Maselko, & Kirkwood, 2008). Moreover, parents have less time and command fewer resources to provide the kinds of stimulation and nurturance children need to assure well-being. Thus, poor housing both directly and indirectly undermines children's development (Bradley, 2006, 2015; Evans, 2003). One of the great difficulties with the high rate of low-quality home environments in poor countries is that such situations continue the intergenerational transmission of poverty and reduced quality of life. Because poor housing quality and lack of access to high-quality materials at home contribute to poor health and lower competence, they reduce the likelihood of increased GDP at the community and societal levels (Qureshi & Mohyuddin, 2006). Failure to improve GDP then increases the likelihood that low-quality housing persists into the second generation and beyond.

In this connection, it is important to note that what is perceived as "Poor housing" could be attributed to climatic adaptations to a hostile environment. For example, in low-lying and humid West African states of Gambia and Ghana, cooler dwellings made of local materials are more habitable during *harmattan* (hot and windy conditions affecting West African states that border the Sahara desert). Somalia has been at war for many years. Consequently, uncertainties that accompany war conditions do not encourage possession of consumer items, such as refrigerators.

Individual caregiving activities ranged from 0% to 87% in prevalence. Both cognitive and socioemotional forms of caregiving were highly variable across sub-Saharan Africa, but mothers in all countries engaged in more socioemotional than cognitive parenting practices, and taking a child out of doors was the most prevalent form of basic caregiving, followed by playing, singing, and naming, and finally telling stories and reading books. In sub-Saharan Africa, learning is more participatory than individualized, and knowledge does not only derive from books or store-bought or homemade toys. Knowledge derives from indigenous practices, including folklore, idioms, and participatory learning (Nsamenang & Lo-oh, 2010). These findings too have implications for parents, practitioners, and

policymakers. In the sub-Saharan context, cognitive learning often comes through riddles and proverbs more than from books and store-acquired toys. Nonetheless, familiarizing children with books (a decidedly Western way of learning) may constitute a dimension of cognitive caregiving that could link with improved child outcomes. For example, parents can share picture books with children even if parents themselves cannot read. Sub-Saharan African countries might distribute books through clinics or other community sources. The key is to devise channels of distribution and acquisition that are culturally appropriate, sensitive to the constraints parents (mostly mothers) face in daily life, sustainable by families, and scalable to reach the vast numbers of families in need. Lessons could be drawn from approaches that have been found to be effective for improving water quality in the home (Jalan & Somanathan, 2004); however, given that cognitive and socioemotional caregiving requires not only basic levels of literacy and knowledge but also relationship building, more intensive interventions may be required.

Within a past month, 79% of caregivers reported that their child had experienced nonviolent discipline; 72% reported that their child had experienced psychological aggression; 69% reported use of physical violence against the child; and 19% reported use of severe physical violence. Indeed, 36% of caregivers believed that physical punishment is necessary to rear a child properly. Although 19% of caregivers reported that they or someone else in their household had used severe physical violence with the child within the last month, there was wide variation across countries: from 6% in Ghana to 29% in Central African Republic. The prevalence of each type of discipline and beliefs regarding the necessity of physical punishment to rear children properly varied widely across countries. The most frequently reported form of discipline in all countries was explaining to the child why something was wrong. In all but one country, more than 70% of mothers reported that someone in their household had explained to their child why something was wrong at least once in the last month. Because the use of

reasoning and explanations has been shown to contribute to children's empathy, prosocial behavior, and moral internalization of parents' disciplinary messages (e.g., Hoffman, 1963; Krevans & Gibbs, 1996), this particular finding is especially reassuring. Parents in sub-Saharan Africa appear to recognize the value in socializing children with explanations for why their misbehaviors are wrong, with country accounting for only between 4% and 6% of the variance in whether mothers reported that someone had explained to their child why something was wrong in the last month.

A direction for future research will be to understand how differences in beliefs about the acceptability and efficacy of different parenting practices in conjunction with the practices themselves might contribute to children's experience of discipline and, thereby, children's subsequent behavior. Normativeness of physical discipline within a cultural group appears to moderate the link between physical discipline and children's adjustment (Deater-Deckard & Dodge, 1997; Deater-Deckard, Dodge, Bates, & Pettit, 1996). For example, in a study of mothers and children in Kenya as well as China, India, Italy, the Philippines, and Thailand, Lansford et al. (2005) found that, although parents' more frequent use of physical discipline was related to more child aggression and anxiety in all six countries, these links were weaker in countries in which the use of physical discipline was more normative. The disparities we observed on specific measures across sub-Saharan Africa are concerning because we know that such disparities tend to increase over time. Policies, laws, and cultural norms play roles in variation in child development and children's environments. This understanding can inform promotion of children's rights.

Country Profiles

Each of the 14 countries in this study had distinct profiles on the constructs we measured. Every country had strengths and weaknesses, relative to the other countries. Here we describe each coun-

ty's functioning across domains, relative to the average or overall effect of countries. Hence, when we say that a country was performing better or worse, it is only relative to the other sub-Saharan African countries in the sample.

Burkina Faso Children in Burkina Faso had poorer growth indicators and housing quality (except access to improved water) and mixed material resources (more access to radios and transportation and less access to electricity, television, and telephone). Caregiving was less likely than average for all caregivers in all activities, and discipline was mixed (lower nonviolence and physical punishment, but higher need to punish physically and psychological aggression).

Burundi Data were missing for all indicators except housing quality and material resources, which were generally worse than average.

Cameroon Children in Cameroon had better than average growth, poorer access to improved water and sanitation, but better than average access to many material resources, books, and toys. Mothers and fathers in Cameroon were more likely to engage in all types of cognitive and social caregiving with their children (except for fathers' reading). Other caregivers were also more likely to sing, take the child outside, and play than average. Finally, discipline showed an unfortunate pattern, with lower than average nonviolence and higher than average psychological aggression, physical and severe physical punishment, and need to punish physically.

Central African Republic Children in CAR had poorer growth, housing quality (but better than average access to improved sanitation), and material resources. Books and store-bought toys were less likely to be available, but they had better access to informal learning objects. Fathers in CAR were more likely to engage in all types of cognitive and social caregiving with their children. Mothers were more likely to engage in naming and singing, but less likely to take children outside or play with them. Perhaps compensating for mothers' lower likelihood of interacting, other

caregivers were more likely to tell stories, name, sing, take children outside, and play with children. Finally, CAR children were more likely to be exposed to nonviolent discipline, but also psychological aggression and physical and severe physical punishment (despite a lower endorsement of the need to punish physically).

Côte D'Ivoire Children in Côte D'Ivoire had greater weight but shorter height than average. Housing quality and material resources were all above average. There was lower access to books but greater access to store-bought toys in the household. Consistent with the available materials, all caregivers were less likely to read and tell stories and more likely to play with children than caregivers in other countries, and all caregivers engaged in more naming, singing, and taking children outside than average. Caregivers were more likely to engage in nonviolent discipline, psychological aggression, and physical punishment and endorsed the need to physically punish at greater levels than other countries.

Djibouti Children in Djibouti were more likely to be underweight but less likely to be stunted. Housing quality was higher than average and material resources were mixed (e.g., greater access to electricity, televisions, and telephones and lower access to radios and transportation). Households were more likely to have children's books (but not adult books) and had an average level of store-bought toys (and fewer informal toys). Mothers and fathers were more likely to read to their children than in other countries, but all other caregiving behaviors were less likely to be engaged in than in other countries. Caregivers were less likely to engage in nonviolent discipline, psychological aggression, and physical punishment.

The Gambia Children in the Gambia had better than average growth, housing quality, material resources, and toys. Caregivers other than mothers and fathers were more likely to engage in all caregiving activities than other countries. Mothers and fathers generally engaged in caregiving activities at average or lower than average

levels. Caregivers in the Gambia were more likely to engage in nonviolent discipline and less likely to engage in psychological aggression and had a lower endorsement of the need to physically punish than other countries.

Ghana Children in Ghana had better than average growth, housing quality, material resources, and books and toys. All caregivers were more likely to read books, sing songs, take children outside, and play with children. With the exception of mothers telling stories, caregivers were average or below average in telling stories and naming, counting, and drawing. Discipline was mixed, with lower than average nonviolent discipline and more psychological aggression and endorsement of the need to punish physically, but lower severe physical punishment.

Guinea-Bissau Children in Guinea-Bissau had lower height (and more stunting) but better weight (and less underweight) than average. Household resources and material resources were mixed (e.g., lower likelihood of having improved water but greater likelihood of improved sanitation, lower access to electricity, but greater access to telephone). With the exception of fathers and other caregivers telling stories, caregiving was less likely than in other countries. Discipline strategies were more positive, with higher use of nonviolent discipline and lower use of psychological aggression and physical punishment and endorsement of the need to punish physically.

Mozambique Children in Mozambique had lower height but higher weight (and less underweight) than average. Housing quality was generally lower than average, and household resources were mixed (e.g., higher access to television and telephone, but lower access to electricity, transportation, and radio). Households in Mozambique had greater than average access to adult books, but lesser access to children's books. Mothers and fathers were less likely to engage in all caregiving activities than average, but other caregivers were more likely to engage in reading, storytelling, singing, and playing than in other countries.

Nigeria Children in Nigeria had fewer growth problems (stunting and underweight) than average. Housing quality was mixed (worse access to improved water and sanitation, better access to finished flooring and refrigeration), but access to material resources and children's books was higher than average (adult books and toys were lower than average). Caregivers in Nigeria were generally more likely to engage their children in cognitive and socioemotional caregiving practices.

Sierra Leone Children in Sierra Leone had poorer growth, lower housing quality, and lesser access to material resources than average. However, households were more likely to have children's books and store-bought toys than average, and caregiving was universally higher than average. Caregivers were more likely to engage in nonviolent discipline and psychological aggression, but less likely to engage in physical punishment and severe physical punishment despite a greater than average endorsement of the need to punish physically.

Somalia Children in Somalia had poorer growth, lower housing quality, and lower access to material resources than average. However, maternal and paternal caregiving were universally higher than average.

Togo Children in Togo had shorter height but greater weight than average. Housing quality was generally lower but material resources were generally higher than average. Households were less likely to contain books and toys. Cognitive caregiving was average or lower, and socioemotional caregiving was higher than average. Caregivers were less likely to engage in nonviolent discipline and more likely to engage in severe physical punishment than average, despite endorsing the need to punish children physically less.

These detailed country level analyses point to some informative trends. Children in Cameroon, the Gambia, and Ghana have better growth rates than other countries (although still well below the normed global average). In these countries, overall housing quality and material resources appear to be better than average as is provision of formal

and informal learning resources. Another compelling pattern emerged for the Central African Republic, Sierra Leone, and Somalia. In these countries, children's growth is poorer than average. Furthermore, these countries have lower than average housing quality and material resources. However, caregivers there are more likely to engage their children through singing, reading, playing, and naming, counting, and drawing. It should be noted that, if these countries have fewer formal learning resources than average, they have higher levels of informal learning resources. These results suggest that, if resource levels are low, caregivers can still be motivated and engage with the young children. Concentrated analyses are required to understand the lessons learned from these countries that could be leveraged to create effective programs for families. By contrast, in Djibouti, Guinea-Bissau, and Burkina Faso, there appears to be very little interaction between caregivers and children around singing, reading books, and playing.

Strengths and Limitations of the MICS

The MICS provides those concerned with children's experiences and child development unique and bountiful data, but data whose limitations need to be acknowledged. Although the MICS contains an impressive number of inhabitants in a substantial number of sub-Saharan countries, the sample sizes vary considerably across countries. Moreover, not all countries provide all data, and comparable data from the developed world are missing. National probability samples are represented, and well-trained national civil workers, demographers, and other key stakeholders from the participating countries worked toward MICS development and administration. Even so, a full consideration of culture and politics in each nation is conspicuous in its absence. The unit of analysis is country, but the sheer number of countries precludes reference to individual national literatures. That is unfortunate, as the MICS user's ability to interpret and contextualize

findings would be enhanced by richer ethnographic understanding of the beliefs, policies, and laws in each country. In this connection, the analyses in this chapter focus on between- and not within-country patterns, which of course vary considerably both within and across samples. MICS data also draw from caregiver reports on limited sets of items, many of which are based on binary yes/no responses. Thus, future directions of MICS data could expand the set of MICS indicators characterizing the proximal environment and link contexts to outcomes. That said, each MICS item references specific domains associated with specific individuals within a specific time period and so may constitute underestimates in the sense that reality probably exceeds the figures presented. Likewise, the data do not take full account of other individuals contributing to the child's life (i.e., beyond mother or principal caregiver). Items in the MICS are reports of mothers (or principal caregivers) about domains in child development, and so are not actual observations, and no controls on reports (as for social desirability of responding; Bornstein, Putnick, Lansford, et al., 2015) are instituted. A complex multinational survey, such as the MICS, is challenging to administer, especially in developing countries. MICS indicators are cross-sectional (precluding causal as well as longitudinal analyses) and subject to historical time as well as seasonality effects (as on the prevalence of certain diseases and infections). These limitations on MICS data constrain their potential.

MICS3 Sub-Saharan Findings Considered Within the Framework of Child Rights to Survival, Development, and Protection

We conclude this chapter with a discussion of our findings using a lens of the almost universally endorsed Convention on the Rights of the Child (CRC; United Nations General Assembly, 1989). We adopt this human rights-based approach to draw implications from the findings because it is

the most comprehensive and legally binding articulation upholding children's rights to survival, development, protection, and participation (United Nations General Assembly, 1989). The CRC supposes an ecological perspective in stipulating rights, with a prominent role given to contexts of development. Furthermore, General Comment No. 7 "Implementing Child Rights in Early Childhood" (United Nations Committee on the Rights of the Child, UNICEF, & Bernard van Leer Foundation, 2006) is intended to provide more detailed information and guidance regarding the implementation of child rights (Britto, Ulkuer, Hodges, & McCarthy, 2013); it states "Ensuring survival and physical health are priorities, but States parties are reminded that article 6 encompasses all aspects of development, and that a young child's health and psychosocial well-being are in many respects interdependent" (p. 38). Health and psychosocial well-being of the child are prerequisites to realizing human potential (Engle et al., 2007). In other words, all children have rights to high-standard health care and nutrition, to an environment that supports their thriving, to nurturing and stimulating interaction, and to protection from abuse and neglect (including both physical and psychological violence). The CRC offers a suitable lens for analysis and policy recommendations because most early childhood development policies link with CRC principles (Britto, Cerezo, & Ogbunugafor, 2008). Although there is no one-to-one alignment between the spheres of growth, environment, and caregiving covered in this chapter and the three sets of rights of the CRC (survival and development, protection, and participation), there is a conceptual overlap that is useful for discerning implications of the results for policy.

The CRC recognizes that parents and key caregivers are entrusted with the primary responsibility of rearing children, but it is also recognized that they require assistance in creating optimal environments. In their key roles of parenting and childrearing, caregivers and the family need support. Per the CRC, in this chain of duties, local communities, countries, and the larger international community are obligated to support caregivers. The CRC presents duties for

these larger systems for the implementation of child rights (Hodgkin & Newell, 2007). For methodological and strategic reasons, this discussion focuses on policy as a mechanism of change. Policy influences family-level resources and functioning as well as family-level outcomes (Minujin, Delamonica, & Komarecki, 2005). The issues of growth, resources, caregiving, and discipline fall primarily under the categories of child rights to survival and development, and discipline practices and quality of housing are most closely linked with child protection rights.

Article 6 of the CRC states that by becoming a signatory to the CRC countries “shall ensure, to the maximum extent possible, the survival and development of the child.” These assessments of the MICS3 therefore have implications for national-level policies. Our results point to different potential targets for programs and policies in sub-Saharan Africa, including: programs aimed at supporting positive caregiving practices in the home, cognitive stimulation, and diminishing harsh discipline as well as programs aimed at education and family income, such as conditional cash transfers. Globally, long-term benefits from high-quality early intervention programs include better health outcomes for children, higher verbal and mathematics achievement, greater success at school, improved employment and earnings, less welfare dependency, and diminished rates of crime (Britto, Engle, & Super, 2013).

Conclusions and Implications

Improvements in infrastructure and access to health care around the turn of the twenty-first century decreased the likelihood that young children will die or suffer growth deficiencies. These movements toward fulfillment of the UN Millennium Development Goals have advantaged young children everywhere. However, improvements have not been uniform within or across countries. To some extent those improvements have shifted what matters as regards community resources, parenting practices, and

household accoutrements, but certain factors (e.g., dearth of household resources, lack of environmental stimulation, poor access to education, failure to protect from disease) continue to play roles in who will survive, grow normally, and thrive. Our findings from sub-Saharan Africa suggest that achievement of MDGs pertaining to child health and development requires continued efforts to modernize community infrastructure and health services and to increase economic well-being. In effect, the quality of a child’s living conditions matters, but (consistent with ecological theories of development; Bornstein & Leventhal, 2015) how much it matters may vary depending on other aspects of the child’s ecology. Not to be forgotten is the need to educate both adults and children. Having parents (especially mothers) who are better educated contributes to the likelihood that children will be better nourished, gain greater access to needed health care, and afford better educational opportunities (Bornstein, Putnick, Bradley, et al., 2015; Gakidou, Cowling, Lozano, & Murray, 2010; Wachs, 2008).

The well-being of the current generation of children and the turnover to the next would almost certainly improve with greater access to income and education (Walker et al., 2007). Even so, efforts to improve standards of living and quality of life are likely fraught with challenges as numerous other factors are implicated in child quality of life and a diverse array of cultural and political considerations helps to determine the likelihood that any effort would result in meaningful change at the individual household level.

There is increased interest in how assets of all sorts can be converted into practices and arrangements that foster children’s health and development (Chowa, Ansong, & Masa, 2010). For those invested in the well-being of children who live in LMIC, the data base on how housing quality and the materials available in homes affect children’s development and their life-course prospects is especially weak. A growing literature documents how poverty and chronic adversity affect parenting; however, that literature is mostly informed by research on children from technologically advanced societies and

research that is limited to select parenting practices. Research that is inclusive, both in terms of the people it investigates and the environmental conditions it considers, remains scarce (Leventhal & Newman, 2010). Moreover, extant research rarely considers indirect pathways through which physical arrangements and access to materials affect children's well-being (but see Bornstein, Putnick, Bradley, et al., 2015). We provide two examples. A study conducted in rural Ethiopia showed that a family's access to sickles and plows increased the likelihood children would attend school regularly as children were not needed as much to help with farming tasks (Cockburn & Dostie, 2007). Bornstein, Putnick, Bradley, et al. (2015) tested how instructional capital (caregiver education) leads to improved infant growth through availability of physical capital (household resources) across 117,881 families living in 39 LMIC. Overall, household resources mediated a large percentage of the association between caregiver education and infant growth across countries characterized by low, medium, and high levels of human development, for girls and boys, and controlling for infant feeding and health. In effect, for child development research to usefully inform housing and economic policy in most countries—policies that necessitate careful decision making and hard choices given limited economic resources—that research must expand in terms of who is studied, what environmental conditions are considered, and what processes linking those conditions to key child outcomes are analyzed. This broader undertaking is also needed to advance the science of environment-development relations more generally. Too much of what we believe about how environments are implicated in children's development derives from research that is insufficiently inclusive of the totality of factors in the home environment that likely matter and the diversity of living conditions present throughout the world. Most developmentalists would probably not have entertained the notion that a family's access to a plow would increase the level of education a child obtains (and all that augurs for employment or health downstream), but exploring such paths in a diverse array of places will almost certainly lead to expansions

and corrections in understanding how environmental conditions function to impact children.

Parents throughout the world are the first and primary individuals entrusted with child caring and the central task of rearing children to become competent members of their society (Bornstein, 2015). From a parent's point of view, child survival is achieved through protection and provision of nourishment, but child thriving is attained through caregiving that involves sharing information through education and inculcating interpersonal competence through socialization. Family, as understood by the CRC, is the closest and most intimate setting where the child has direct interactions with significant others. However, the most proximal context of child development, namely, the family, is influenced by more distal contexts of community, policy, and culture (Bronfenbrenner, 1979; Robinson, Eickelkamp, Goodnow, & Katz, 2008).

A methodological virtue of the MICS data lies in their ability to provide evidence for policy planning. Although implications of our study proceed under this rubric, we are aware that the path is not always direct and simple. Associations among growth, the environment, caregiving, and discipline are interlinked and complex. Survival, development, and protection rights are stated by the CRC as interdependent and indivisible, underlying the importance of holistic policies and integrated programming approaches throughout the life cycle. However, for the purposes of explanation and providing direction for policy, we employ a disaggregated analysis and approach. During the early years, children make great strides in all domains of development—acquisition of gross and fine motor skills, language and cognition, social skills, emotions, and self-regulation (Bornstein, Arterberry, & Lamb, 2014). Interactions with primary caregivers and the characteristics of home, as the most proximal contexts for development, are associated with these great strides. For example, through responsive feeding and adequate nutrition; through exposure to opportunities and optimal conditions of the home; through interactions, such as looking at books, singing songs, and naming objects; and through warm and active nonviolent discipline practices, caregivers influence children's

survival and development positively (Bornstein, 2015). The rights to survival, development, protection, and participation are kindred rights. These inalienable rights could potentially be at risk for a large proportion of sub-Saharan African children by the indicators of growth, exposure to inadequate housing, cognitive and socioemotional caregiving, and violence at home. It has been recommended that all articles and rights of the CRC be implemented with a view to achieving maximum survival and development and protection of the child as this concept embodies the core principle of the CRC—the best interests of the child (Hodgkin & Newell, 2007).

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