

# Caregiving roles of female guardians, older siblings, and time spent on child activities

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## Abstract

**Objective:** This pilot study investigated the different roles Zambian guardians and older siblings play in stimulating children and how time spent engaging in child stimulating activities was associated with child stimulation. In this study, guardians were women who are primary caregivers of the children.

**Background:** A lot of research has been done on child stimulation but little is known of different roles caregivers, especially older siblings, play in child stimulation.

**Method:** Questionnaires were administered to caregivers (both older siblings and guardians) of children between 3 and 5 years of age and their older siblings above 7 years old.

**Results:** Results showed that despite the female guardians spending more time taking care of their children, older siblings were significantly more involved in child stimulating activities than the female guardians. Further data showed that guardians with more education were associated with increased child stimulation. However, socioeconomic status, age of guardians, and family size were not associated with child stimulation.

**Conclusion:** In poor communities, older siblings engage more in child stimulating activities than their guardians. Child stimulation interventions have often focused on parents (guardians) leaving out older siblings who may play a more critical role, especially in circumstance where parental care and availability are absent. Therefore, for child cognitive and socioemotional stimulation interventions to be more effective in poor communities, they should include siblings. More research is needed to understand the role of male guardians and the degree to which sibling stimulation predicts cognitive and socioemotional development.

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**KEYWORDS**

child stimulations, children, guardians, siblings, time spent with children

Early experiences are crucial for cognitive and social–emotional development (Tierney & Nelson, 2009). Optimal child development includes the interconnection of cognitive, language, motor and social–emotional development. Although the first 3 years are crucial, child development is a continuous process. Therefore, it is essential that a child is in an environment that offers stimulation for the brain by exposing a child to a wide range of activities that excite the child’s sense of sight, hearing, and touch. Activities that excite the child’s senses are referred to as stimulation. Child stimulation activities engage children’s senses and can help improve children’s attention span, memory, curiosity and nervous system development (Zolten & Long, 2006).

Both quality and quantity of child stimulation activities affect brain development. Stimulation through play helps babies use their bodies, senses and develops mental activity (Nijhof et al., 2018). Specifically, the quality of stimulation, including sensitive and responsive parenting, has been associated with socioemotional and cognitive development (Votruba-Drzal et al., 2004; National Institute of Child Health and Human Development Early Child Care Research Network, 1999). The amount of stimulation (i.e., quantity) predicts cognitive outcomes, such as language, reading, and math (Votruba-Drzal et al., 2004; Sylvia et al., 2021). Although both quality and quantity of child stimulation are associated with positive cognitive outcomes in children, the evidence here indicates that quality of child stimulation is more effective than quantity.

Activities that parents or older siblings engage in can help stimulate children’s senses. Singing, storytelling, and naming objects, among others, have been documented to help stimulate children (Richards & Conte, 2020). Caregivers can contribute to their child’s absorption in play activities by creating an environment that provides play materials and elaborates on the play by targeting multisensory stimulation. However, in developing countries like Zambia, the majority of children do not reach their cognitive development potential due to poverty, poor health and nutrition, and inadequate cognitive stimulation (Grantham-McGregor et al., 2007). Psychosocial influence on cognitive development through stimulation intervention has been researched widely (Jeong et al., 2016; Walker, 2010) and has been shown to benefit many children from communities with resource constraints (Jeong et al., 2016). However, cognitive stimulation, along with other factors important for child development, are absent to assure children’s sensory stimulation in low-income countries (Walker, 2010). Further, studies that have looked at the effect of stimulation have mainly focused on the role of mothers or other female caregivers (see, for example, Bornstein & Putnick, 2012). However, sibling relationships are important in child stimulation. Despite the importance of these relationships, most studies have not focused on the role siblings play in cognitive and socioemotional stimulation. Instead, studies on siblings have mainly focused on sibling behavioral and social outcomes (e.g., de La Rochebrochard & Joshi, 2013).

For young children, an older sibling is not just a partner to play with but also someone who serves as a role model as far as the development of hobbies or different interests (Prokosz, 2015). Evidence in Zambia indicates that older siblings perform more sibling care than in developed countries such as the Netherlands (Mooya, 2016). Evidence shows that the number of older siblings a child has correlates with that child’s verbal skills, including verbal intelligence, language-development measures, and educational attainment (Black et al., 2005). Older siblings also help their younger siblings develop intellectual and emotional skills and inspire them to explore the reality around them (Prokosz, 2015). Thus, input and interactions with siblings can be beneficial, particularly if parents are not in the position to provide quality care or sufficient quantity of care (Day & Evans, 2015). However, the actual activities older

siblings play to influence cognitive and socioemotional development in children are not well documented. Limited research findings only show that siblings who show sensitivity to the cognitive needs of their younger siblings provide a rich environment for language development (Prime et al., 2014).

Parents invest both material and time into raising children. Time investment in children is critical to the development of the socioemotional and cognitive skills of the children (Guryan et al., 2008; Nicoletti & Tonei, 2020). In Zambia, like many other developing countries, the inequalities in societies are indisputable, with the abilities gap between children from different socioeconomic backgrounds visible across cognitive and socioemotional domains. As of 2015, 58% of Zambians earned less than the international poverty line of \$1.90 per day compared to 41% across Sub-Saharan Africa (World Bank, 2019). Thus, successful caregiving that promotes cognitive and socioemotional competencies, such as cognitive stimulation, sensitivity and responsiveness to the child, and emotional warmth is difficult when family resources are inadequate (Bornstein & Putnick, 2012). In such circumstances, caregivers spend a great deal of time struggling to provide food, housing, and other necessities at the expense of caregiving. Even in high socioeconomic backgrounds, increased participation of women in economic activities and employment means they spend less time with their children. Time is a mediating factor between caregiving activities and child stimulation. If a caregiver spends more time with a child, the child is likely to be more stimulated for cognitive and socioemotional development (Fallesen & Gähler, 2020).

Interestingly, educated and employed parents spend less time with children but engage more in stimulating activities whenever they have time compared to parents with less education and who are unemployed (Guryan et al., 2008; Bornstein & Putnick, 2012). Further, single parents and parents in reconstructed families (families living together after one or both partners have divorced their previous partners) spend less time on developmental activities such as reading and playing with a child (Fallesen & Gähler, 2020). In addition, parents in poverty or with lower levels of education spend less time on child development related activities (Barros et al., 2010).

However, there are mixed results in relation to time spent with children and cognitive outcomes (quantity vs. quality of time). For instance, Milkie et al. (2015) observed that the amount of maternal time did not matter for offspring behavior, emotional outcomes, or academic outcomes. A similar observation was also made by Hsin & Felfe (2014) who concluded that the amount of maternal time just reduced the type of activities that may be detrimental to child development. It seems that poverty and lower levels of education can increase day-to-day struggle to find resources, and the stresses of trying to cope with living in deteriorated dangerous circumstances undermines caregiving skills and contribute to disorganized family life (Bornstein & Putnick, 2012). In such cases, older siblings assist parents in caregiving activities for younger children.

SOS Children's Village in Zambia has recognized that children in some poor communities are at the risk of losing (neglected or without) parental care. In response to this need, SOS Children's Village has been implementing a family strengthening program to help families prevent crises that can lead to parental neglect and, in the worst scenarios, child abandonment. The family strengthening program focuses on families with children at risk of losing parental care. The program works with families and communities to help them build their capacities so that children receive care that provides sufficient stimulation and positive outcomes, and families stay together. Depending on individual needs, families may be supported through counseling, as well as material support, such as day care, education access for children, and access to vocational training for parents and young people. The family strengthening program, when necessary for the child's well-being, provides care for the child through alternative care in an SOS family, a foster family, or another family-like environment depending on the best interest of the child (SOS Children's Villages International, 2016).

The current pilot study was conducted in poor communities that have been categorized as having children at risk of losing (neglected or without) parental care by the SOS Children's Village in Zambia. In Lusaka city, the focus of this study, SOS has been implementing the Family Strengthening Programme in nine poor, high-density shanty compounds including Chazanga, Mandevu, Chipata, Garden, Independence, Chaisa, Chingwere, Kabanana, and Lilanda. Due to the low education levels of people who live in these communities, many households depend on informal activities to support their families. The nature of these activities makes adult caregivers commute for hours to find piecework or sell merchandise in the streets of the central business district of Lusaka.

Data were collected prior to the implementation of the Family Strengthening Programme. This data included characteristics of households, stimulation activities, parenting attitudes and belief, and child care time investment. For this study, only stimulation activities and child care time investment data were considered.

Based on the data collected, it was possible that older siblings' input and interactions with the child provided cognitive stimulation, sensitivity and responsiveness to the child, and emotional warmth that supported the child's well-being. Interactions, particularly in the absence of parental interactions, could support children when parents were not able to provide that type of support. Therefore, the objectives of the study were to (a) investigate female guardians' and older siblings' levels of engagement in child stimulating activities for children younger than 5 years of age, (b) to investigate the type of activities female guardians and old siblings engage in with the children, and (c) investigate if guardian's level of education is associated with child stimulation activities.

## Method

I was awarded a grant by the African Early Childhood Network (AfECN) to design and conduct a pilot study that would inform programming aimed at improving intervention implementation of any organization working to improve child development. I worked with SOS Children's Village Zambia under the Family Strengthening Programme. The SOS Family Strengthening Programme targets disadvantaged families toward the goal of preventing family crises that can impact parents' capacity for interaction with and caring for children and, in the worst-case scenario, lead to child abandonment or maltreatment. The program supports parents with the goal of increasing parents' capacity to provide for their children. Specifically, the program supports families with economic empowerment capacity building, such as entrepreneurship, financial literacy, and working capital. The program also provides parenting skills to caregivers. This program was implemented in poor communities that have been categorized by SOS Children's Village Zambia as having children at risk of losing parental care. Children in these communities were considered to be at risk of not attaining their full developmental potential. This study was conceived based on this observation and was designed to enable SOS Children's Village to identify risk and protective factors for child cognitive stimulation and socioemotional development that could be used to pilot the development of low-cost child stimulation interventions.

## Participants

Based on the SOS Children's Village family register under the Family Strengthening Programme, 200 out of 398 households were needed for the study. The sample was determined using statistical power set at 0.80. Of these, 150 households met the inclusion criteria of having a child between 3–5 years, and an older sibling who was 7 years or older. Final data were

collected from 148 households. The guardians' (adult primary providers responsible for child care) average age was 47.71 years ( $SD = 12.20$ ). Of the 148 households, 42 (28%) were single-headed households. The average family size was 7.66 members ( $SD = 2.40$ ). The guardians' average number of years spent in school was 6.08 years ( $SD = 2.92$ ), equivalent to primary schooling level in Zambia. Of the 124 older siblings who were available at the time of data collection, 75 (60.5%) were female. Further, 109 (88%) were in school. The average age for older siblings was  $14.13 + 2.68$ . Overall, 77 (52%) children aged between 3–5 years in the 148 households were not going to school (preschool). For details refer to Table 1.

**TABLE 1** Demographic characteristics of participants

	Valid <i>n</i>	Total sample
Guardian and household characteristics data		
Sex		
Males	8 (5%)	
Females	140 (95%)	
Age	148	47.71 ± 12.20
Education (years in school)	137	6.08 ± 2.92
Single-headed household	42 (28%)	
Family size	148	7.66 ± 2.40
Perception of family support to take care of a child	145	0.76 ± 0.43
Est. time (hrs.) spent with child (≤5 yrs.)	147	3.07 ± 2.20
Meet daily basic needs		
No	137 (94%)	
Yes	8 (6%)	
Monthly household income	148	K715.20 ± 615.22 (US\$55)
No. of family members with source of income	131	1.10 ± 0.78
Schooling children		
No	77 (52%)	
Yes	70 (48%)	
Number of children not going to school	77	2.29 ± 1.13
Reason for not schooling		
Lack of resources	60 (41%)	
Lack of interest	16 (11%)	
Health concerns	4 (3%)	
Teen pregnancy	4 (3%)	
Early marriage	4 (3%)	
Older sibling data		
Sex		
Males	49 (39.5%)	
Females	75 (60.5%)	
Age	124	14.13 + 2.68
Schooling		
No	15 (12%)	
Yes	109 (88%)	

## Procedure

All procedures were approved by the University of Zambia, Ethics Committee for Humanities and Social Sciences. All participating guardians signed informed consent and children assented to participate. Three field officers at SOS Children's Village collected data as part of their routine assessment activities for the households under the Family Strengthening Programme before the empowerment programs had been rolled out to the households. At each household, the data collectors collected data from the female and male guardian, and an older sibling 7 years and above. However, due to nonavailability and refusal to participate, data from only eight (5%) male guardians were collected. Each participant answered the questionnaire during their own free time, in privacy, and on the day of their convenience.

## Measures

### Child stimulation scale

This measure contained some items from the Home Observation for Measurement of Environment (HOME) Inventory (Bradley & Caldwell, 1984) and literature (Bornstein & Putnick, 2012) on indicators of stimulating activities. This measure only assessed activities of child stimulation rather than home environment characteristics that stimulates children. The child stimulation scale had nine items and each item described activities that adults do to stimulate children on a 5-point rated scale from 0 = *not at all* to 4 = *often engage*. The nine activities included singing, telling stories, exploring the outside environment, reading, naming objects, counting objects, talking to a child, drawing/coloring, and playing with objects. The nine activities can be engaged in by both adults and older siblings. An overall score was calculated by adding all of the item scores. Higher scores indicated highly engaged in stimulating activities. The child stimulation scale had good internal consistency of  $\alpha = .77$ .

### Quantity of time invested in child stimulating activities

The question "how many hours per day do you reckon you spend doing these (stimulating activities) per day?" was asked to guardians and older siblings. The other was "how many hours per day do you spend taking care of the child?" The questions were measured on an interval scale.

## Data analysis

Descriptive statistics disaggregated by the type of caregiver (guardian vs. sibling) was conducted to understand item level differences on child stimulation and on other demographic characteristics of interest. An independent *t* test was conducted to understand the difference in time that female guardians and older siblings invested in child care and child stimulating activities.

A regression analysis was conducted in which the predictor variable (type of caregiver, which was coded as follows: 0 = guardians and 1 = older sibling). Stimulation was the outcome variable. Time invested in child stimulating activities and other demographic characteristics were also entered in the model to determine their association with child stimulation.

## Results

### Time investment in child care

No difference was found between mothers and older siblings in relation to time taking care of a child ( $3.07 \pm 2.20$  and  $2.62 \pm 2.14$ , respectively). However, a significant difference emerged when guardians and older siblings were compared on the number of hours they spent engaging in child stimulating activities. More siblings ( $1.78 \pm 1.56$ ) than guardians ( $1.28 \pm 1.20$ ) engaged in child stimulating activities in a day. For details, see Table 2.

### Caregiver engagement in stimulating activities

Data revealed that out of the nine stimulating activities, talking to a child as if the child was an adult was the only activity that the female guardians engaged in more with the child ( $2.07 \pm 1.35$ ) compared to the older siblings ( $1.37 \pm 1.32$ ), as can be seen from the mean and standard deviation scores. The other stimulating activities were done more by the older siblings than the guardians. Data also revealed that telling stories to the child was the only stimulating activity that was not statistically significant between guardian and older siblings. For details on the differences in the level of child engagement in stimulating activities, see Table 3. When data were disaggregated by gender of the older sibling, there were no differences that were observed on how much older boys and girls engaged in stimulating activities except on singing songs to young siblings. Here data showed that more girls ( $2.40 \pm 1.33$ ) reported singing to their younger siblings than boys ( $1.77 \pm 1.52$ ). For details see Table 3.

### Demographic predictors of child stimulation

A multiple regression was conducted in which quantity of time the caregiver engaged in child care and stimulating activities were associated with child stimulation in Model 1. Results showed that the hours engaged in child care was not associated with engaging in child stimulation ( $\beta = .18, p > .05$ ). However, the increased time invested in stimulating activities was associated with engaging in child stimulation ( $\beta = .26, p < .01$ ). In Model 2, quantity of time engaged in stimulating activities was also a positive predictor of child stimulation ( $\beta = .24, p < .05$ ). However, age of the guardian was not associated with engaging in child stimulating activities ( $\beta = -.07, p > .05$ ). Equally, socioeconomic status ( $\beta = -.08, p > .05$ ) and number of family members ( $\beta = .17, p > .05$ ) were not associated with engaging in child stimulating activities. Interestingly, data revealed that being a single-headed household was associated with increased child stimulating activities ( $\beta = .32, p < .01$ ). Further, higher level of guardian education was

**TABLE 2** Mean differences between guardians and older siblings in time spent with children

	<i>n</i>	Mean $\pm$ SD
Approximate hours taking care of the child		
Guardians	147	3.07 $\pm$ 2.20
Older siblings	124	2.62 $\pm$ 2.14
Approximate hours caregiver engages in child stimulating activities		
Guardians	147	1.28 $\pm$ 1.20**
Older siblings	124	1.78 $\pm$ 1.56

\*\*< .01.

**TABLE 3** Stimulating activities engaged in by older siblings and guardians

		Mean (SD)		p value
		Guardians	Siblings	
Stimulating activities				
1	Reading book (e.g., books, magazines, Bible) or looking at pictures	1.09 (1.37)	1.62 (1.40)	<.01
2	Telling stories	1.96 (1.47)	1.91 (1.39)	>.05
3	Singing songs	1.89 (1.41)	2.15 (1.44)	>.05
4	Engage in conversations with a child as if he/she was an adult	2.07 (1.35)	1.37 (1.32)	<.001
5	Taking a child outside to deliberately expose child to outside environment	0.73 (1.14)	1.12 (1.34)	<.01
6	Playing with a child	1.61 (1.40)	2.63 (1.29)	<.001
7	Naming objects	1.36 (1.39)	1.96 (1.28)	<.001
8	Counting objects	1.56 (1.49)	2.38 (1.31)	<.001
9	Drawing with child (on paper or ground)	1.18 (1.43)	2.19 (1.50)	<.001
10	Stimulation total score	13.57 (7.58)	17.18 (7.09)	<.001
Male vs. female older siblings				
		Mean (SD)		
		Males	Females	
Older siblings' engagement				
1	Amount of time spent with sibling	2.61 (2.15)	2.62 (2.15)	>.05
2	Stimulation total score	17.08 (7.43)	17.26 (6.89)	>.05
3	Reading book (e.g., books, magazines, Bible) or looking at pictures	1.71 (1.44)	1.56 (1.38)	>.05
4	Telling stories	1.92 (1.27)	1.89 (1.47)	>.05
5	Singing songs	1.77 (1.52)	2.40 (1.33)	<.01
6	Engage in conversations with a child as if he/she was an adult	1.30 (1.36)	1.41 (1.29)	>.05
7	Taking a child outside to deliberately expose child to outside environment	0.96 (1.33)	1.23 (1.33)	>.05
8	Playing with a child	2.68 (1.29)	2.58 (1.30)	>.05
9	Naming objects	1.79 (1.25)	2.08 (1.30)	>.05
10	Counting objects	2.43 (1.32)	2.35 (1.32)	>.05
11	Drawing with child (on paper or ground)	2.35 (1.48)	2.08 (1.50)	>.05

Note: High value indicates higher effect/direction, for example, more (1.62) siblings engaged in reading books than guardians (1.09).

associated with increased engagement in child stimulating activities ( $\beta = .23, p < .05$ ). Details are in Table 4.

## Discussion

The main objective of this study was to investigate female guardian and older sibling levels of engagement in child stimulating activities and the nature of child stimulating activities engaged by the two caregivers for children younger than 5 years of age. Results revealed that being an older sibling was associated with a higher level of child stimulation activities in relation to being a guardian. This could have been influenced by the socioeconomic status of the households



**TABLE 4** Factors associated with child stimulation

Model	Unstandardized coefficients		Standardized coefficients Beta	<i>t</i>	<i>p</i> value	95% CI
	<i>B</i>	<i>SE</i>				
Model 1						
1 (Constant)	10.32	1.51		6.82	.000	[7.32, 13.33]
Hours of child care	0.54	0.31	.18	1.77	.080	[-0.07, 1.15]
Hours of child activities	2.03	0.80	.26	2.56	.012	[0.35, 3.62]
Model 2						
1 (Constant)	3.84	5.21		0.74	.463	[-6.52, 14.20]
Hours of child care	0.40	0.30	.13	1.35	.183	[-0.19, 0.99]
Hours of child activities	1.89	0.77	.24	2.47	.016	[0.37, 3.42]
Age (guardian)	-0.45	0.08	-.07	-0.60	.551	[-0.19, 0.10]
Single-headed HH	4.82	1.55	.32	3.11	.003	[1.73, 7.91]
SES	-0.34	0.59	-.08	-0.70	.489	[-1.30, 0.63]
Education (years)	0.56	0.26	.23	2.18	.032	[0.05, 1.06]
No. of family members	0.56	0.38	.17	1.50	.137	[-0.18, 1.31]

Note: CI = confidence interval; HH = household; SES = socioeconomic status. Doubled headed were coded (0) and single headed (1).

involved in this study. The households were from resource constraint communities. Thus, guardians may have been spending more time fending for food and other necessities than they did engaging in stimulating activities with children, as has been observed with many poor communities (Bornstein & Putnick, 2012). This study found that guardians compared to older siblings engaged more in talking activities with the children (0.73[1.14] vs. 1.12 [1.34]). Unlike older siblings, guardians were only likely to stimulate children through talking to them as if they were adults. Talking to children as if they were adults promotes communication, language development, socioemotional skills, and helps children solve problems (Beals et al., 1994). The parents' long absence away from their children could have been making them talk to the children as if they were adults in order to catch up on the child's events of the day. This might have been a conscious or subconscious effort to solicit information from the children on what happened during the day and know how the children were.

Telling stories and singing songs to children did not differ between guardians and older siblings. This could be because storytelling and singing are a common feature of the African tradition. In the Zambian context songs and stories often manifest in any interaction, consciously or subconsciously. Songs and stories are also perceived to make activities enjoyable. Interestingly, these two do not require literacy skills and are less cognitively challenging compared to the other child stimulating activities in this study. However, singing songs was reported to be more prevalent among older female siblings than older male siblings, a finding that was not surprising. In the African tradition, it is common for girls or females (siblings) to be singing while playing with a child or doing household chores and this manifests subconsciously.

Overall, the results showed that more older siblings engaged in child stimulating activities than guardians. These results are consistent with other findings, which showed that mothers from poor countries engage less in stimulating activities and on average engage in one or two activities (Bornstein & Putnick, 2012). This could be as a result of time constraints on the part of guardians who may have been spending more time fending for food and other necessities. Low literacy levels on the part of the guardians could also explain low engagement in cognitive-related stimulating activities. Hence more siblings engaged more in cognitive stimulating activities. Anecdotal evidence suggests that the younger generation is more literate than the older

generation in Zambia. In African societies, older children are inevitably expected to look after their younger siblings, sometimes without adult supervision and for considerable periods of time, in order to free time for parents to engage in other social or productive activities.

According to the parental investment theory, investment improves offspring survival and/or quality (Trivers, 1972). Therefore, the poor socioeconomic status of the households in this study could suggest that they are focused more on making ends meet to support offspring survival than in deliberate child stimulating activities. In this case what seems plausible is quantity of time, which may be intermittent or uninterrupted. The data showed that guardians spent slightly more time taking care of children than siblings but engaged less in child stimulating activities. Although studies have shown that mothers' time spent on educational activities is the most productive input into cognitive skills (see Del Bono et al., 2016), the present study revealed that older siblings spent more time on stimulating activities (cognitively and socioemotionally) with their siblings than guardians did. Although older siblings spent a significant amount of time stimulating children, it is unlikely that they would engage in deliberate quality child stimulation activities, but rather, engage in these as part of their play, as surrogate caregivers without knowing the positive implications the activities have on the child's cognitive and socioemotional development.

The study also investigated the role education level of the guardian plays in predicting child stimulation. As expected, even in poor communities with many uneducated guardians, basic education can be useful in child stimulating activities. Although the average education level in our sample was sixth grade, results showed that the higher the education level a guardian had attained, the more they engaged in child stimulating activities. This is consistent with many other studies (see, for example, Bornstein & Putnick, 2012). Further, single-headed households were associated with increased child stimulation. The findings on single-headed households' association with child stimulation were contrary to other studies (Bornstein & Putnick, 2012; Fallesen & Gähler, 2020). It could be that single-headed households put in extra time to compensate for the role of a father figure. Regarding the family size, it was surprising to find that even the children in big families who were exposed to multiple caregivers lacked exposure to stimulating activities. In the Zambian context where sibling care is common, this argument would have made sense.

These results raise a question which needs to be answered within the current study context. Is it quality or quantity of time that matters in child stimulation activities? Future studies should explore this question further, together with the role that fathers play in child stimulation.

## **Implication for practice and theory**

In the modern home, parenting has significantly changed especially with the increasing participation of women in economic activities. This entails that parents may have less time to spend with their children. Notwithstanding the importance of quality over quantity of child activities parents engage in with their children, in the current study context, quantity of child stimulating activities may be crucial for the socioemotional and cognitive development of children especially in the first 5 years. Therefore, interventions focusing on improving child development, especially in low resource communities, should not only focus on the primary caregivers but also consider the role of other secondary caregivers in the child's environment. In poor communities, older siblings, grandparents, and significant others play a significant role in child stimulation compared to the child's primary caregiver. Therefore, interventions should consider including older siblings and other secondary caregivers in a more efficient and effective manner without disrupting the older siblings' schooling and robbing them of their right to be being children. While on average older siblings spent about 3 hours taking care of their younger siblings

in this study, their rights to play with others should be respected. Further, stimulation intervention should focus on the quality of time and engagement in child stimulating activities that the primary caregiver spends with children and not quantity. Although quantity is important as demonstrated in this study, the limited time that guardians have with their children calls for intervention that emphasizes the quality of time spent with children.

The study is not without limitations. First, it did not measure the outcomes of stimulating activities on cognitive and socioemotional development. The study only focused on quantity of time, leaving a gap on the influence of quality of time in child stimulation. Further, some demographic characteristics of participants such as the different categories of guardians were missing. Furthermore, the study did not include the role of male guardians in child stimulation due to their nonavailability. The fathers' nonresponse was extremely high (95%); therefore, fathers could not be added in the analysis. Knowing the amount of time fathers and other caretakers of children such as neighbors contribute, a common feature in Zambian poor communities, and how this complements or substitutes mothers' time input would improve our understanding of stimulating activities in these poor communities.

In conclusion, in poor urban communities of Zambia, older siblings engage more in child stimulating activities than guardians do. The majority of communities are poor; thus, guardians may spend more time engaging in livelihood activities other than child care. Therefore, interventions promoting quantity of stimulation should also consider the role of siblings in stimulating children for cognitive and socioemotional development. More research is needed to understand the role those older siblings play to promote the quality stimulation in children. Specifically, observation studies on the interaction between older and younger siblings would be needed. It would also be interesting to understand effects that caregiving roles have on older siblings. Further, the role that male guardians play and the degree to which sibling stimulation predicts cognitive and socioemotional development should be explored in the future.

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