Effects of Home Environment on Children's Development A Comparative Study

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Original Article

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Abstract:

Home is the first environment that children encounter which forms the bedrock through which factors that promote their physical, cognitive, social and emotional development are anchored. These promotive factors vary from one home to another. The main objective of carrying out this study was to compare and determine effects of home environment on children's development. For this study, we employed a case-control study design where we had two study groups; Nairobi study group and Bratislava (study control) group. Sample size for the Nairobi study group was 24 respondents while that of Bratislava was 20 respondents. Respondents to this study were par-

ents of young children aged 6-10 years. We used Middle Childhood Home Observation for Measurement of the Environment Inventory (MC-HOME), a standardized questionnaire developed by Prof. Robert Bradley and Prof. Bettye Caldwell to measure home environments of children. We used the Shapiro-Wilk test to determine whether research data were normally distributed and student t for independent sample to compare means of the two study groups. This study found a difference of means between the two study groups (p=0.005, n=44). The Bratislava study group had a higher mean (mean =42.35, Standard deviation=6.73) compared to the Nairobi study group (Mean =34.21, Standard deviation= 11.27). The two study groups deferred on encouraging maturity, learning materials and opportunity, and physical environment. We also found similarities between the two groups in terms of parental responsivity, setting of emotional climates, family companionship and family integration. We thus, concluded that the four factors that influence development children in home environments namely: proximal processes; Characteristics of the caregiver; Environmental context; time variance from one home to another. This may now explain why developmental trajectories of children are never the same.

Introduction

Home is the first environment that children encounter which forms the bedrock through which factors that promote their physical, cognitive, social and emotional development are anchored. These promotive factors vary from one home to another. There are some homes that have higher levels of them while others are deficient of them. These promotive factors according to Bronfenbrenner's ecological systems theory are; **i) Proximal process**es i.e. all reciprocal interactions that takes place between children and, people, objects and symbols that surrounds them. **ii) Characteristics of the caregiver,** i.e. do they initiate, sustain or disrupt proximal processes through motivation, temperament or self-control? Are they resourceful to the needs of the developing child such as sharing past experiences, teaching new skills, or providing children with access to social capitals like relevant friends and relatives networks? Do they encourage good behaviors or discourage bad ones? **iii) Environmental context** i.e., physical and social space in which events that directly or indirectly influence children's development takes place such as family and school environments, parents' workplace, and legal space (i.e. bureaucratic procedures and boundaries of national

laws), cultural beliefs and practices. **iv) Time;** influence on the development of the child i.e. during a child's development were reciprocal processes provided in a continuous or discontinuous manner? With what frequency were the proximal processes provided? What events such as parent's death or economic depression happened during a child's development? (Rebecca, Elizabeth, & George, 2016; Edinete & Tudge, 2013; Bronfenbrenner, 1979; Bronfenbrenner, 1994; Robert & Lillian, 2016, Herdics *et al*. 2017).

Homes that are deficient of these four factors that promote development, normally churn out children who are not properly developed in all spheres and in most cases these children do turn out to have behavioral problems (Patricia, *et al.,* 2017; Kalavsky *et al*. 2018) In a longitudinal study of adoptive and biological siblings done by Burt, Mcgue, & Iacono, (2010) found that development of antisocial behavior was more demonstrable in children who were raised in shared environment compared to those who were raised in non-shared environment. Some of the antisocial behavioral children raised in homes deficient of stimulating factors for development are; **Oppositional Defiant Disorder** (ODD) i.e. a disorder characterized by recurrent

pattern of negativistic, defiant disobedient and hostile behaviors displayed by children towards figures of authority such as parents and teachers such as throwing of tantrums and aggression, and **Conduct Disorder** (CD) characterized by behaviors such aggression, deceitful, destructive behaviors to property, and serious violation of social norms and laws.

The main Objective of this study was to compare and determine effects of home environment on children's development.

Methods

2.1 Study population

This comparative study was done both in Nairobi, Kenya and Bratislava, Slovakia. In Kenya, it was done among residents of Nairobi's South 'B' area and Mukuru Slums. Respondents for this study group were all members of Pentecostal Evangelistic Fellowship of Africa (P.E.F.A) Church south 'B'. Respondents from this population were grouped together to form the Nairobi Study Group (Initialized as NI). In Slovakia, this study was done in two public rehabilitation schools for children with behavioral problems. The two centers were; Diagnostic Center on Slovinska Street Bratislava, and Medical-Educational Sanatorium, Hrdlickova 21, Bratislava. Respondents from these two study centers were joined together to form the Bratislava study control group (Initialized as BA). In both study groups, respondents to this study were parents of young children aged 6-10 years.

2.2 Research design

This was a case-control study design that involved comparing two study groups. A total of 44 respondents (24 from Nairobi and 20 from Bratislava) were enrolled into the study using simple random technique.

2.3 Data collection

Data for this study was collected using a questionnaire called **Middle Childhood Home Observation for Measurement of the Environment Inventory** (MC-HOME). MC-HOME is a standardized questionnaire developed by Caldwell & Bradley (2018) to measure quality of home environment. It comprises of 59 items grouped into 8 scales namely: Responsivity, En-

couragement of Maturity; Emotional Climate; Learning Materials and Opportunities; Enrichment; Family Companionship; Family Integration; Physical environment. Before administration of the questionnaire, permission was sought from the Bishop of the PEFA church and Directors of Rehabilitation Schools in Slovakia. Before collecting data, written permission to use MC-HOME Inventory was sought and granted by Prof. Robert Bradley of Arizona State University. Informed consent was also obtained from respondents before they were enrolled into this study. A single blind was also used in this study so as to reduce biases associated with data collection using the interview technique. Two sets of standardized questionnaires were given to research assistants. They were asked to administer one set of questionnaires to children and the second one to parents. The one they administered to parents was the MC-HOME Inventory while the second was not. Thus, research assistants did not know who the primary target of the research were.

Statistical analysis

To conduct data analysis, scores from each MC-HOME Inventory questionnaires were entered in a frequency table. The frequencies were then subjected to the Shapiro-Wilk Test to determine whether they were normally distributed. The Shapiro-Wilk Test results showed that the frequencies were normally distributed. The frequencies were later subjected to student t test for independent samples to test difference of means between the two study groups. A two-sided p value of < 0.05 was set as the threshold for statistical significance. The study data were analyzed using SPSS version 23.

Results

3.1 Difference between the two study groups

We observed an overall difference between the two study groups in terms of their means. Bratislava study group had a higher mean (mean =42.35, Standard deviation=6.73) compared to Nairobi study group (Mean =34.21, Standard deviation= 11.27).

Discussion

Our overall study results showed there was a difference of means between homes in Nairobi

Scores per each scale in the MC-HOME Inventory between the two study groups

		Study Groups		
		Bratislava (BA) N = 20	Nairobi (NI) N = 24	P value
Parental responsivity	Mean ± SD	9.30 ± 1.63	8.75 ± 1.19	
	Minimum	4.00	6.00	0.203
	Median	10.00	9.00	
	Maximum	10.00	10.00	
Encouragement of maturity	Mean ± SD	4.70 ± 1.30	6.00 ± 1.25	
	Minimum	3.00	3.00	**0.002**
	Median	5.00	6.00	
	Maximum	7.00	7.00	
Emotional climate	Mean ± SD	5.00 ± 1.62	4.33 ± 2.22	
	Minimum	3.00	0.00	0.271
	Median	5.00	4.00	
	Maximum	8.00	8.00	
Learning materials Opportunity	Mean ± SD	5.65 ± 1.27	3.125 ± 2.11	
	Minimum	3.00	0.00	**<0.001**
	Median	6.00	3.00	
	Maximum	7.00	8.00	
Enrichment	Mean ± SD	5.60 ± 2.04	3.875 ± 2.63	
	Minimum	0.00	1.00	**0.021**
	Median	6.0000	3.5000	
	Maximum	8.00	9.00	
Family Companionship	Mean ± SD	4.75 ± 1.37	4.08 ± 1.72	
	Minimum	2.00	0.00	0.168
	Median	5.00	4.50	
	Maximum	6.00	6.00	
Family Integration	Mean ± SD	2.15 ± 1.39	2.08 ± 1.86	
	Minimum	0.00	0.00	0.895
	Median	2.00	3.00	
	Maximum	4.00	4.00	
Physical environment	Mean ± SD	5.20 ± 1.96	1.96 ± 2.88	
	Minimum	2.00	0.00	**<0.001**
	Median	5.50	0.00	
	Maximum	8.00	8.00	
Total	**Mean ± SD**	**42.35 ± 6.73**	**34.21 ± 11.27**	**0.005**
	Minimum	**27.00**	**16.00**	
	Median	**43.50**	**30.50**	
	Maximum	**54.00**	**58.00**	

(Mean =34.21, Standard deviation= 11.27) and Bratislava (mean =42.35, Standard deviation=6.73). Parents in Bratislava promoted factors that support children's development in their homes than their counterparts in Nairobi. We further examined this difference and found that the two study groups deferred on encouraging maturity, learning materials and opportunity, and physical environment.

Encouraging maturity, the extent to which parents expect their children to demonstrate socially responsible and mature behavior and conform to family rules, is an important refiner of children's behavioral outcome. It shapes their behavior by teaching them what is socially acceptable and unacceptable. There are three ways through which parents can encourage their children to mature: **i)** direct interactions such praising them, or withdrawal of some privileges afforded to them when they fail to follow family rules, *ii)* emotional identification - tend to identify with certain characteristics of their parents such as religious views, ethnicity, social class, personality, talents and interests, etc. **iii)** Sharing stories about family accomplishments propels children to maturity. For example, if a child is told of a story how his/her parents became renowned professors, the child is more likely to be proud of them and would want to follow their footsteps (Kagan, 1999). In our study we observed some differences between the two study groups in terms of encouraging maturity. The Nairobi study group encouraged more their children to be mature and be independent than their counterpart in Bratislava. This observation can be attribute to societal culture in Nairobi that tend to encourage children to leave their parent's homes at an early age (at approximately age 22 years) compared to their counterparts in Bratislava who leave their parent's home later.

The home environment provides children materials and opportunities to learn various skills such as communication, social and emotional skills, motor skills, and cognitive skills like thinking and problems solving, etc. Learning these skills are normally facilitated by proximal processes such as peer relations, plays, and observations (Mattias, 2010; Shahum *et al,* 2017). Learning these skills may be facilitated by materials such as dictionaries, sports and mu-

sical instruments, books and magazines, and trips to museums among many others. In this study we observed statistical difference (p<0.001) between the two study groups in terms of how they provided learning materials and opportunities. Parents in the Bratislava study group were more likely to provide their children with materials and opportunities than their counterparts in Nairobi. We attributed this difference lengths of time parents spent on their maternity leaves. We observed that parents in the Bratislava study group had lengthier maternity leaves (approximately 3years) than their counterparts in the Nairobi group who had only 6 months maternity leave. Thus, children in Bratislava enjoyed a prolonged window of opportunity for learning from their parents than respondents in Nairobi. A study done by Liu, Lin, & Chen, (2009) found that children whose parents were not responsive were more likely to develop delinquent behaviors.

Physical environment is a key factor in home environment that aids in stimulating development in children. The nature of a physical environment dictates types of play and activities developing children may engage themselves in. Play has been associated with development of social and psychomotor skills in children. Remmers, *et al.,* (2014). Thus, home environments that are deficient of play space hamper development of children. It denies them opportunities to explore and experiment with their environments. In this study we observed a huge difference in terms of physical environments between the two study groups. Bratislava study group had higher scores (Mean =5.20 Standard deviation =1.96) compared to Nairobi groups (mean = 34.21, standard deviation 11.27). We further observed that houses in Nairobi neither had wall hangings nor were they painted with colors that were friendly to children being dull and monotonous. External playing fields for children were completely not there. Thus, children in Nairobi study groups were forced to either participate in physical activities while in school or not to participate in them at all.

Conclusions

We observed that home environments for children in Nairobi, Kenya and Bratislava, Slovakia differed in encouraging maturity, learning

materials and opportunity and physical environment. The two home environments also shared some similarities in terms of: parental responsivity; setting of emotional climates; family companionship; family integration. Paternal figures were constantly absent in both home environments. We thus, conclude that the four factors that influence development of children in home environments namely proximal processes, characteristics of the caregiver, environmental context and time varies from one home to another. This may now explain why developmental trajectories of children are never the same

Acknowledgment

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